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MR. COOK'S REPORT ON RUBBER.

AS the result of a preliminary study of rubber culture in Guatemala and southern Mexico, Mr. O. F. Cook, of the botanical staff of the department of agriculture at Washington, has written a report* that merits careful study by all who are interested in the cultural production of rubber. These studies, which are not yet concluded—for Mr. Cook is already on a second visit to the southern country—are directed primarily to the question whether rubber planting is advisable for Porto Rico and the Philippines, in the economic development of which islands the Washington authorities now have a concern. It is recognized, however, in the preparation of this report, that it will have a more immediate and popular interest in connection with the subject of investments in rubber culture in nearer regions, by citizens of the United States, in regard to which the agricultural office has been in receipt of many inquiries.

While the author does not presume to offer final conclusions, as a rule, his report does not thereby lack in interest and value, by reason of the many questions to which he gives consideration—problems of a practical nature that require solution before rubber culture can be regarded as having a fixed basis. Briefly, the report can be summarized as asserting that the practicability of the agricultural production of rubber has been demonstrated, but that it bids fair to become very profitable only under favorable natural conditions, and these conditions are as yet imperfectly understood.

The report is consistently conservative throughout, the author avowing that it is not his intention to discourage the rubber planter, or investors in planting companies, but merely to set forth the difficulties and uncertainties that beset rubber culture, from the desire that unnecessary mistakes be avoided. But from the remark that "many cultural mistakes are still made with plants that have been in domestication for thousands of years," it may be inferred that the starting of rubber plantations need not necessarily be deferred until the definite solution of all the problems bearing upon this subject which may occur to the scientific investigator. Indeed, the truth is to be arrived at only by persistent experimenting on a broader scale than has been afforded in botanical gardens, where the results obtained, according to Mr. Cook, "have at most but a local value and cannot be accepted as final."

Rubber culture is not a new proposition, since its beginnings date back thirty years or more. With an annual plant, thirty years of experience should teach us much, but for dealing with long lived trees that period is short, and it need not be a matter of surprise that rubber culture, in many respects, is still in an experimental stage. Most of the earlier attempts resulted in failure, which might have been predicted simply on the grounds of probability, and many people concluded that the production

* The Culture of the Central American Rubber Tree. By O. F. Cook, botanist in charge of investigation in tropical agriculture. (United States Department of Agriculture. Bureau of Plant Industry—Bulletin No. 49). Washington: Government Printing Office. 1903. [8vo. Pp. 86 + 18 plates.]

of rubber by planting trees was impracticable. On the other hand, when some success began to be achieved, the fact was too often taken for granted as a verification of the original estimates of yield and profits, in spite of some of these having been disavowed by their authors. The practicability of rubber culture having been established, non resident investors have been induced to take an interest in plantations, sometimes by too liberal promises of returns, and Mr. Cook's warning is that success and large profits are not assumed without the caution and discrimination required for other branches of agriculture and other lines of investment.

To take up the more scientific features of this report, it is pointed that the essential requirements of *Castilloa*—the rubber tree specifically dealt with—yet require to be more fully known. Mr. Cook inclines to the view that it is not essentially a forest tree, but even if it were, it does not follow that it should be planted under the same conditions as in the wild state. Our cultivated plants generally have much better conditions than their wild relatives. Planting *Castilloa* in the undisturbed forests he regards as clearly inadvisable; but as to the proper degree of shade or its absence, "each planter will need to use his best judgment in determining what local conditions require — — — No general principles will determine what is best, because no one method is applicable everywhere."

It has been found possible with many plants to increase the average percentage of starch, sugar, or oil through the planting of selected seed or cuttings, and Mr. Cook suggests the probability that a like result is possible in the case of rubber. There is, in the natural state, no uniformity in the yield of the rubber tree of any given species, nor is such uniformity to be looked for in planted rubber. There are conditions under which rubber trees may not yield any *latex*, whether wild or cultivated. These and other considerations suggest the importance of great care in planning a plantation of rubber, which at best requires years to become productive. Moreover, there is more than one species of *Castilloa*, and all are not of equal value as rubber producers.

Clearly there is a wide field for scientific investigation, to demonstrate not only the proper location and other conditions for planting rubber trees, but also the best method of extraction of *latex* and preparation of the commercial product. Then the rubber planter may order his work with the same confidence of results that the farmer now feels in the case of the crops that long have been staple. But we venture to say that long before this state of things arrives, very much rubber will have been obtained from plantations. We might suggest that many of these problems relate equally to the extraction of rubber in the forests, the total of which has now become enormous, without any assistance thus far from science. This is not by way of disparagement of such work as Mr. Cook is doing, however, which we welcome as promising results of great importance to the rubber planting interest.

The rubber planting world, indeed, is to be congratulated upon a manifestation of interest in this subject by an institution of the standing of our agricultural department.

FOREIGN ENTERPRISE IN BRAZIL.

THE alien who, in seeking to supply the demand in his own country for what is called "Pará rubber," settles on the Amazon river to-day, places himself almost beyond the pale of civilization. If he acquires a so called rubber "concession" and the natives steal all his rubber, rendering his investment fruitless, the laws of the Amazon states leave him without redress. In case of any legal dispute, such as may arise under the laws of any civilized country, the outsider, under the legal codes in force on the Amazon, may as well consider himself non-suited in advance.

Now it is not intimated here that the common law of England—the basis of the jurisprudence of largely by far the greater part of the rubber consuming world of to day—should be recognized on the Amazon. But the states in that region must recognize the potency of some European code of law antedating their existence as states, guaranteeing the rights of individuals and the sanctity of contracts. If they do not, the necessity remains for nations based upon principles of modern civilization to regard the communities on the Amazon as not yet having attained to an equal status with them.

Within a few decades past, capital from other than Brazilian sources has been invested—and on a large scale—in rubber estates under Brazilian control. The failure to realize a large production of rubber must be ascribed either (1) to deception on the part of the Brazilian vendors; (2) to the robbery of the purchased estates, without protection from Brazilian laws; or (3) to a lack of business acumen on the part of the foreign investors. It happens, by the way, that, regardless of the small shipments by the foreign investors, the total exports from the districts referred to have amounted to the normal figure; besides, it would be somewhat singular if Anglo-American investments should prove unsuccessful only on the Amazon and its tributaries.

What should be regarded as a higher aim for statesmanship in Grão Pará and Amazonas than the utmost development of the trade in rubber in those regions? How many holders of the suffrage in the two states named are prepared to contribute capital for the exploitation of rubber therein? What does the Brazilian, properly so called, to develop what is thus far the most important economic interest along the Amazon? Nothing. Hence the desirability of encouraging the investment of capital there by outsiders. So long as North America and Europe are prepared to pay liberally for the chief product of the Amazon states it is most unreasonable that their citizens should continue to be treated as brigands while attempting to do business on that river.

THE MOST PALPABLY DISHONEST ADVERTISING we remember to have seen has been carried on for several months past, on a vast scale, purporting to solicit subscriptions to the capital stock of a company formed to trade in rubber in Venezuela. We have assumed that not all of the persons advertised as officials of this company have been aware of how the public was being deceived in their name, and now that the advertising has ceased, we may say that in exposing the swindle this Journal

has not intended any attack upon any individual who may have been connected with the business. But the incident should serve as a warning to honest men generally to be more careful about lending their names to the promotion of stock selling schemes.

SOME CONCLUSIONS REGARDING RUBBER CULTURE.

BY ORATOR F. COOK.*

THE culture of the Central American rubber tree has passed the experimental stage in the sense that the practicability of the agricultural production of rubber has been demonstrated, but on the other hand it has been ascertained that the tree may thrive where it will yield little or no rubber. Under favorable natural conditions the culture of *Castilla elastica* bids fair to become very profitable, but the experimental determination of the factors which influence the production of rubber has scarcely begun. [The spelling *Castilla*, instead of *Castilloa*, has been adopted at Washington, on account of its being the original form.]

In southern Mexico and Central America the regions well adapted to the culture of *Castilla* are much more limited than has been supposed. The presence of wild *Castilla* trees is not a sufficient evidence that a locality is suited to commercial rubber culture.

Differences in the yield of rubber are not due merely to the existence of different species and varieties of *Castilla*, but are also controlled by external conditions.

The functions of the rubber milk in the economy of the plant are not well understood or agreed upon by botanists, but there are numerous reasons for holding that in *Castilla* and many other plants it aids in resisting drought.

A continuously humid climate is not necessary to the growth and productiveness of *Castilla*; the indications are rather that the quantity of milk and the percentage of rubber are both increased by an alternation of wet and dry seasons.

In its wild state *Castilla* does not flourish in the denser forests, but requires more open situations. It is confined to forest regions only by the perishability of its seeds.

Castilla thrives better when planted in the open than in the dense forests; even young seedlings are not injured by full exposure to the sun, providing that the ground does not become too dry.

The planting of *Castilla* under shade or in partially cleared forests is to be advised only on account of special conditions or as a means of saving labor and expense.

The loss of the leaves in the dry season may be explained as a protection against drought, and does not indicate conditions unfavorable to the tree or to the production of rubber.

The falling of the leaves of *Castilla elastica* in the dry season renders it unsuitable as a shade tree for coffee or cacao. In continuously humid localities where the leaves are retained shade trees are superfluous and the yield of rubber declines.

The desirable features of shade culture, the shading of the soil, and the encouragement of tall upright trunks, are to be secured by planting the rubber trees closer together rather than by the use of special shade trees. Planting closer than 10 feet, however, is of very doubtful expediency.

The percentage of rubber increases during the dry season and diminishes during the wet. The flow of milk is lessened in dry situations by inadequate water supply, but at the beginning

of the rains such trees yield milk much more freely than those of continuously humid localities. The claim that more rubber is produced in the forest or by shaded trees seems to rest on tapping experiments made in the dry season.

Continuous humidity being unnecessary, the culture of *Castilla* may be undertaken in more salubrious regions than those to which rubber production has been thought to be confined; the experimental planting of *Castilla* in Porto Rico and the Philippines becomes advisable, but extensive planting in untried conditions is hazardous.

No satisfactory implement for the tapping of *Castilla* trees has come into use. Boring and suction devices are excluded by the fact that the milk is contained in fine vertical tubes in the bark, which must be cut to permit the milk to escape.

In British India it has been ascertained that the Pará rubber tree may be repeatedly tapped on several successive or alternate days by renewing the wounds at the edges. The yield of milk increases for several tapplings and the total is unexpectedly large. It is not yet known whether multiple tapping is practicable with *Castilla*, or whether this new plan may not give the Pará rubber tree a distinct cultural advantage over *Castilla*.

The gathering of rubber from trees less than eight years old is not likely to be advantageous; the expense of collecting will be relatively large, and the quality of such rubber is inferior, owing to the large percentage of resin.

The rubber of *Castilla* is scarcely inferior to that of *Hevea*. The supposed inferiority is due to substances which can be removed from the milk by heat and by dilution with water.

THE ECONOMY OF RUBBER COLORS.

EVERY one familiar with the use of dry pigments in rubber compounding has noted the remarkable differences, at any given price per pound, in the coloring effect obtainable from colors of the same designation. The variations in this regard are often so great that a serious question of economy is involved in making a selection.

Most of the dry colors used in rubber work are not chemically inert, like the ordinary fillers, barytes, silica, whiting, and asbestine, and therefore should not be used beyond the amounts necessary to produce the desired color. The strongest pigment—that is, the one capable of yielding the greatest coloring effect, at a given price per pound—is invariably the one to use. The various grades of color of the same maker are graded in coloring quality to correspond with the prices asked, but between two makers of ostensibly the same goods there is not infrequently a variation in coloring value of several hundred per cent., when compared by "money equivalent weight." By this term is meant the amount of each color purchasable for a given sum.

The strength of a pigment, or its ability to impart its color when mixed in a rubber compound, depends principally on its degree of fineness. Each particle of pigment, however finely divided, has the same color quality as every other particle in the same pigment, and consequently the greater number of particles in a given bulk the larger the amount of material to which the pigment can impart its color. In other words, the more finely ground the pigment, the more adulteration or dilution it can stand. Every color should thus be reduced to impalpable fineness. Whether this has been done or not with any sample is easily determined by rubbing a pinch of the material between the thumb nails. The slightest amount of grit can quickly be detected in this manner.

The relative economy of two pigments is simply ascertained

*These paragraphs form the concluding chapter of a late publication by the United States department of agriculture, of which a review appears on another page of this Journal.—THE EDITOR.

by a color comparison based on money equivalent weight. This weight is determined for any lot of samples under consideration by calculating how much of each is obtainable at some given price, generally the lowest quotation being selected as this price. The calculated amounts are carefully weighed on a sensitive scale. One weighing to grains is sufficiently accurate. Uniform amounts of white lead paste ground in oil are next weighed, one for each color sample, and placed at convenient distances apart on a sheet of glass. With an ordinary spatula or palette knife each money equivalent weight of color is thoroughly mixed with one of the portions of white lead. In this way a series of tinted leads will be obtained with color sufficiently diluted to show plainly the variations in strength of the original pigments. To express the differences quantitatively all the samples must be brought to the same tint by the addition of weighed amounts of lead to the stronger samples, and the percentage variation determined with reference to one sample as standard.

The following example will serve to illustrate the method of figuring an actual test: Two oxides of iron, *A* and *B*, are to be compared; *A* costs 6 cents per pound and *B* 8 cents. The money equivalent weights will therefore be for *A* 4 parts and for *B* 3 parts for the same money. Weigh out samples of *A* and *B* in these proportions—say 20 grains of *A* and 15 grains of *B*—and thoroughly mix each of these samples with one ounce of white lead paste. Supposing that sample *B* when so mixed is still strongly enough colored to require one ounce more of lead to match mixture *A*, it follows that *B* is 100 per cent. stronger on the basis of money equivalent weight. In other words, a pound of *B* at 8 cents will do as much coloring as two pounds of *A* costing 12 cents—or an actual saving in favor of the higher priced color by reducing the amount required. This illustration is a very moderate

instance of the actual differences in value observable in practice. In the case of blacks the variations are frequently enormous.

It should be noted that by preparing a color card from each sample tested, a permanent record of the colors may be obtained. Such cards, carefully marked with date and notes of the test, will prove a valuable help in maintaining the grade of goods desired. Every reputable color dealer will welcome comparisons of his goods based on "money equivalent weights" as explained above. The ease, accuracy, and profit with which these tests can be made should bring them to the favorable consideration of every factory superintendent.

A RUBBER FACTORY HOSPITAL.

ALTHOUGH few very serious accidents occur in rubber factories, there are a great many minor ones, particularly where a large force is employed. The prompt treatment of such accidents not only obviates much suffering, but is a definite time and money saver. The illustration shows a corner of the emergency hospital that, started as an experiment,

is now a permanent part of the works of the Hood Rubber Co., at Watertown, Massachusetts. The hospital is equipped with everything in the way of instruments, bandages, lint, and antiseptics that the treatment of sprains, bruises, cuts, or fractures may demand. In addition, there is a good stock of the remedies usual to dispensary practice. The room, besides the usual electric lights, has two large arc lights, an electric water heater, a surgeon's operating table, and various minor appliances. A careful record of all cases treated is kept, the number for the first eight months of 1903 being 1778. Not only is the hospital useful in accident cases, but it has been found most valuable in determining and stamping out contagious diseases. For example, within a twelvemonth both diphtheria and German measles were detected. The cases were at once isolated and the diseases eradicated before having a chance to become epidemic. A competent physician is in charge of the hospital and the work he has done is much appreciated by both the company and their 2300 employés.

RUBBER NOTES FROM EUROPE.

THE TIRE SITUATION IN GERMANY.

A WRITER in the *Gummi-Zeitung* on the tire situation mentions that orders for bicycle tires generally are placed with the factories during the autumn months. Last autumn no one could have foreseen the advance which has taken place in the cost of crude rubber—amounting to 33½ per cent. at the time the article was written—and manufacturers in consequence have not found their business remunerative. Already the tire business yielded only small profits, since the decline in the prices of bicycles, due in part to overproduction, had imparted a certain depression to tire prices. In accepting orders for 1904 the rubber manu-

facturers will be forced to ask higher prices, not only because of the increased cost of rubber, but because of the advance in cotton fabrics as well. The *Gummi-Zeitung* writer counsels tire manufacturers not to permit the higher cost of materials to tempt them to lower their standards of quality. It would be desirable, he says, if manufacturers of bicycles should demand higher prices for their output, to correspond with the higher cost of rubber products, though he fails to point out what influence the rubber trade can have in this direction. But it is interesting to hear from bicycle manufacturers and dealers that their experience with cheap tires has been very unsatisfactory, which fact may be helpful to the tire manufacturers in their insistence upon maintaining the quality of tires.

GREAT BRITAIN.

GEORGE R. BROWN & Co., 3, Jewry street, Aldgate, E. C., London, have arranged to represent the Northern Rubber Co., of Retford, Notts, England, in the sale of their mechanical rubber goods in the London trade. Mr. Brown began his connection with the trade at an early age, in the employ of the North British Rubber Co., Limited.



A RUBBER FACTORY HOSPITAL.

THE RUBBER SUPPLY AND DEMAND.

ANY material decline in crude rubber prices must result from a wider margin than now exists between supply and demand. In other words, there must be (1) a check to the rubber industry, or (2) an increased production of the raw material. The first condition, of course, no one wishes to see, besides which no reason is apparent for predicting its occurrence in the near future. Then what is the outlook for more rubber?

An encouraging fact is that the production of Pará rubber has been steadily progressive from the beginning. The total exports from the Amazon river amounted in 1864 to only 7,840,000 pounds, and in the 38 years since only in eight cases has it happened that the output in any one year failed to show an increase over the preceding crop. In 1902 the figure was 62,809,500 pounds, and the trade in general looks for as much rubber this year. To take the last ten crop seasons (July to June) the rate of increase or decrease in the yearly arrivals at Pará has been as follows:

1893-94.....	+3.9 %	1898-99.....	+14. %
1894-95.....	-1.3 %	1899-00.....	+5.2 %
1895-96.....	+7.8 %	1900-01.....	+3.5 %
1896-97.....	+6.4 %	1901-02.....	+8.5 %
1897-98.....	-0.03 %	1902-03.....	-0.35 %

No study of statistics or conditions has yet revealed any law of increase or decline in production in this field, or a basis for prediction in any year. Two years ago an important Liverpool firm staked their reputation on a prediction that the next Pará crop would show a shortage of 20 per cent., and that the price would go to 4s. 6d. The crop actually showed a gain of 8½ per cent., and at the end of the season Pará rubber was selling at about 3s. The general attitude of merchants and traders on the Amazon is that of never expecting short crops, the reasons for which are well set forth on another page of this Journal by a Pará merchant of long experience.

Some criticism has been elicited by the article by Mr. Paul Cibot, reprinted in the last INDIA RUBBER WORLD from a French source, relative to the extinction of wild *Hevea* rubber, which he regards as an ultimate, though not imminent, certainty. Mr. Cibot has been a careful observer, for the last seven years, of rubber conditions on the rio Beni, and his views are entitled to respect, though the experience of the state of Pará would suggest that in Bolivia, as in the lower Amazon region, the collection of rubber will continue even after the period of the richest yield of the trees is past. Long as the rubber fields of Grão Pará have been worked, they now yield more rubber than ever before. The annual increase was rapid until, in 1893, the crop reached 8000 and some hundred tons, at which figure it remained for six years, the upriver output, from virgin fields, meanwhile increasing 25 per cent. Later the exports from Pará state have increased to over 10,000 tons, due probably to some extension of the area worked, as well as more judicious treatment of the trees. The Pará output is now being increased some by the discovery in that state of Cacho, the receipts of which last season were 310 tons, against 85 tons the year before, and almost nothing previously.

A correspondent at Pará writes, bearing upon the continuous yield of old rubber estates: "Only a comparatively small percentage of the rubber trees on any estate are worked. There are always plenty of fresh trees near the *estradas*, and if the manager of the *seringal* is a man of enterprise (which is by no

means likely to be the case) he will search out and tap new trees as fast as the old ones die out, and this will keep up his quantity for an unlimited time. The life of a rubber tree which is tapped every season will not be more than 40 years, and when the work is not carefully or judiciously done, the tree will die out in less than half that time. For this reason it is plain to be seen that new rubber fields must be opened from time to time."

The Amazon exports include of course, the grades of rubber known as Cacho, obtained from other trees than the *Hevea* species. From all accounts it appears that the collection of Cacho involves the destruction of the tree, so that new fields must constantly be sought by the *caucheros*, for which reason a falling off in the supply has long been looked for. THE INDIA RUBBER WORLD (October 1, 1901) has published an exhaustive study of the rubber production of Colombia, which, after reaching a very large figure, has declined to almost nothing. That rubber is of the class marketed as Cacho. The *caucheros* moved from Colombia to Ecuador and thence to Peru, everywhere exhausting the sources of supply. The trade in this rubber in Iquitos for awhile was very large, but it has now declined until business generally at that port is in a depressed condition. And yet Cacho continues to come to market, because of new areas being opened to exploitation. The decline so long expected has not yet begun, unless it is to be seen in the fact that the export through Pará last year was smaller than in the preceding year; the totals for several years having been:

YEARS.	United States.	Europe.	Total.
1888.....	643,992	423,200	1,067,192
1892.....	930,225	735,067	1,665,292
1897.....	858,839	1,214,173	2,073,012
1901.....	1,325,290	2,638,590	3,963,889
1902.....	1,133,155	2,057,222	3,190,377

Certainly the limit of this large production must be reached in time, for the whole of the Cacho producing district, just as has occurred already in Colombia, Ecuador, and an important portion of Peru, after which the reliance for uncultivated rubber in America must be the *Hevea* trees of the Amazon region—the only rubber species that, in the wild state, is not destroyed in the extraction of its product.

The falling off of the rubber output of every important field thus far worked in Africa has been referred to often in THE INDIA RUBBER WORLD, and though new fields are opened from time to time, the total output is smaller now than it was a few years ago. The statistical summaries supplied by Hecht, Levis & Kahn (Liverpool) indicate that the yearly receipts of rubber at the leading markets of the world have been distributed as follows:

SEASON.	Pará sorts.	Other sorts.	Total.
1898-99.....	23,329	26,818	50,147
1899-00.....	24,423	26,655	51,077
1900-01.....	25,255	25,224	50,479
1901-02.....	27,171	22,888	50,059
1902-03.....	27,446	25,713	53,159

It would thus seem that the yearly receipts of Pará sorts have increased at a steady, though not regular rate, the figure being larger by 17.6 per cent. last year than for 1898-99. On the other hand, the highest figure for all other sorts combined was reached five years ago, since which time the yearly average of such receipts has been about 1700 tons less than for the season 1898-99.

There was a time when the world's consumption of rubber

was supplied almost wholly from Pará. Then the Indian and African sources were developed, until their production exceeded that of the Amazon regions. During five years past, however, according to the figures in the preceding table, the percentage of other than Pará grades in the combined receipts in the markets, has been as follows:

1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
53.4 %	52.1 %	50 %	45.7 %	48.3 %

To sum up: Pará grades again form the larger half of the world's supply. The rate of increase in the Pará output seems

likely to be less rapid in future, especially as that output comprises Caucho—a grade destined to practical extinction. Madagascar and Assam sorts are practically gone, as are several West African sorts, and even the Congo output grows less rather than larger. It is possible that some of the unworked districts may be opened more speedily than now seems likely, but it now appears entirely safe to regard the limit of the world's rubber production, as a whole, as more nearly reached than at any time in the past. This condition does not inspire any hope of lower prices, to say the least.

RUBBER PROSPECTS IN THE AMAZON COUNTRY.

BEING asked to favor THE INDIA RUBBER WORLD with his views on the future of the supply of Pará rubber, Mr. Rudolph A. Zietz, of Pará, who is at present in New York, expressed himself as follows:

"I do not believe, as far as human judgment can foresee, that the output of rubber of all species, from the territory drained by the Amazon river and its tributaries, will ever be permanently 'short.' On the contrary, I believe more in estimating an average yearly increase, though not at the same ratio as in the last 25 years, during which it has risen from about 7000 to 30,000 tons. It is likely that in some years the crop may show a small shortage, but it will be counterbalanced by a larger crop in the following years. This gradual and steady—but from now on slower—increase will be the natural consequence of the constant opening up of new regions, the extension of facilities for transportation, and improving sanitary conditions along the Amazon. The quicker and better means of communication are enabling people to protect themselves more against the climatic conditions, and to hurry away in case of sickness.

"In a good many of the rubber districts permanent settlements of rubber collectors have developed, and they are becoming acclimated and learning to brave the peculiar hardships of life there. The work of collecting rubber can be done with comparatively fewer people to-day than formerly. I do not believe that the supply of new rubber hunters by immigration will be larger than heretofore. It is claimed that the material available from the north Brazilian states, willing or able to endure the privations of life in rubber gathering, cannot be materially increased, and as to the Indians, the principal reliance in the remote districts, I do not think that additional forces worth speaking of can be obtained. However, this question of labor, in view of the sanitary and other improvements stated above, will not to any extent interfere with the natural increase of the annual output.

"I do not doubt that in the course of time enthusiastic prophets will arise, predicting all sorts of things about very large or small crops, to further their own speculative ideas and interests, and by doing so disturb the course of the consuming markets. I may for instance cite the prophecies for the crop year of 1901-02. Some people predicted a very small crop—as much as 20 per cent. shortage. These prophecies were plausibly based on the presumption that the severe financial crisis at that time existing in Pará and Manáos (a natural reaction following senseless overtrading and other commercial errors) would interfere with supplying the necessities of life to the rubber gatherers, to the extent that work in some districts would have to be abandoned. Well, it turned out that the 1901-02 crop surpassed the previous crop by about 8 per cent. Those prophets had not taken into consideration that a great

portion of none too honest rubber gatherers, who had been working under masters, apparently abandoned their territory without delivering to its owners the rubber they had gathered, but in some way the rubber found its way to market.

"The proper control of the labor at some interior points is an impossibility. Many of the poor ignorant gatherers cannot withstand the temptation of making what they consider a fortune in a short time, without paying any attention to the wrong they do to their masters, who advanced the necessities of life to them in good faith. Many *aviadores* (merchants who do the trading in the interior) who were largely indebted to the Pará and Manáos merchants were, in consequence of not getting the expected rubber, unable to meet their obligations, and thus assisted in causing the financial crisis. I feel convinced that all available rubber trees, worth tapping, were tapped, and will always be tapped.

"After the time, many years ago, when rubber ceased to be exported in the shape of shoes, the state of Pará was the first to inaugurate the collecting of rubber on a large scale and exporting it in its present shape. In the course of time Pará has been far surpassed in the quantity of output by the state of Amazonas and other upriver districts. Almost the whole state of Pará has now been explored, and consequently the output of rubber from this quarter will remain more or less stationary, though it may yet show a slight increase, independent of the fact that the year 1902 showed an exceptionally large output for Pará state. But the upriver districts will be the great factor in the gradual general increase of the output of rubber from the Amazons. In a good many districts in Pará the rubber trees have become exhausted and abandoned, but as the Almighty is the best friend of Brazil, I suppose that new trees will appear in time, and that the now abandoned districts may be reopened.

"When the whole rubber area of the upriver regions, undoubtedly containing many virgin districts, has been fully developed and explored, many trees will be abandoned or exhausted, just as is the case in the state of Pará. One hopeful feature is that people are endeavoring to take better care of the trees and give them a 'rest' now and then, and introduce better systems of rubber gathering. Whether rubber plantations will ever be successfully established or whether the Brazil's paternal government will try, in its own interest, through wise and practical advice, to stimulate the slumbering energy and good common sense of its obedient and docile, but intimidated subjects, is hard to say. The good people on the Amazon are too much accustomed to shutting their eyes and trusting in Providence.

"You might quote the opinion of a clever and patriotic Brazilian politician, expressed at Rio de Janeiro many years ago, of the character of his own countrymen:

Comquanto nós estejamos acordados o paiz atraze 2 passos, no nosso somno Deus, mesmo contra a nossa vontade, nós puxa para deante 3. [meaning in English: Whilst we are wide awake during the day, our country goes back two steps, but when asleep God pushes it against our own will three steps ahead.]

"Thus nature will push the rubber output of the gigantic, beautiful, and marvelously favored Amazonas, and if it fails in

one corner it will be made up in another, and with it the whole rubber business will go ahead in Brazil, giving to everybody concerned a chance to make money, or lose it. In any event, I am convinced that for many years to come Brazil will be able to furnish large quantities of rubber, unsurpassed in quality by the product of any other country and perhaps not approached by any."

A COMPARISON OF RUBBER PRICES.

THE diagram on this page, indicating the fluctuations in the price of Pará rubber for the past eighteen years, is based upon a record of the highest New York price month by month. It may possess a historical interest, showing as it does at a glance the course of the market during a longer period than most persons who will see this page have been concerned about the price of rubber. But any attempt to analyze the causes of the fluctuations here outlined, particularly with a view to propounding some law governing the market, is met by some very inconvenient obstacles.

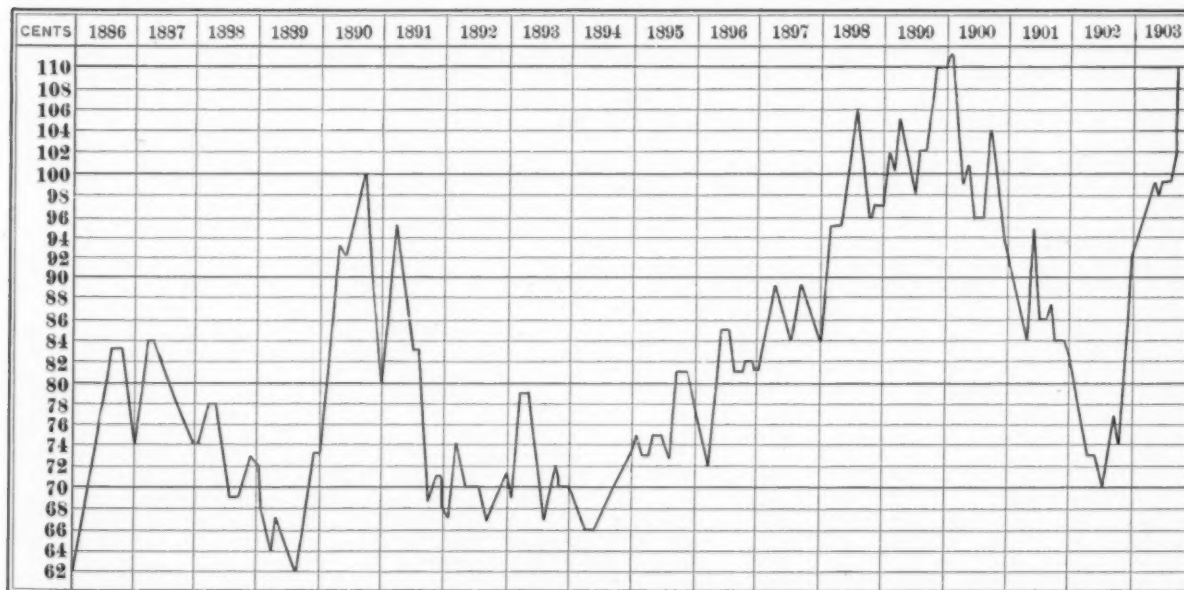
The size of stocks regulates prices less directly than might be supposed. Stocks of Pará rubber in the United States and Europe—not counting supplies at Pará and afloat—on December 31 of each year have averaged about 3,000,000 pounds. The smallest stocks for the end of any year were reported in 1895 (1,765,000 pounds), at which date the highest quotation for Pará sorts was only 78 cents. The largest stocks (5,000,000 pounds, at the end of 1901) were coincident with prices about 6 cents higher. The highest prices shown in the chart were reached at a time when stocks were considerably above the average. The lowest price, however (in 1889), belongs to a period of low stocks.

The rate of consumption—something not always easily estimated at the time—must also be taken into account. For the years of industrial depression in the United States, in the early '90s, the chart shows a low average of prices. The more recent decline was aided by the failure of a New York importing

house, which exposed an unsuspected surplus of rubber, and was coincident with depression in the industry in some European countries. No condition of stocks will lead to high prices when the buying demand is light. Yet, on the whole, the law of supply and demand does operate in regard to rubber the same as every other commodity, and the most recent advance is not surprising in view of the admitted short supplies in every market in the world.

The high prices of 1890-91 were attributed at the time to, speculative manipulation, managed during the latter part of the period by Vianna, of Pará, though his activity really was manifested too late for him to realize any profits. Every considerable advance, by the way, is charged by consumers to speculation, though evidence generally has been lacking that the world's supplies have been largely held by any one interest. Just now an English firm are widely reputed (in this country) to be pursuing a policy in raising rubber prices which their competitors have not strongly attempted to oppose. But English authorities, on the other hand, insist that the prevailing prices are not speculative, but due to the unusually small supplies, coupled with a heavy consuming demand and uncertainty as to the future.

The highest prices ever reached, however—\$1.20 in 1882—were due wholly to the first speculative movement engineered by Vianna at Pará. He did have a virtual monopoly for awhile and controlled the market as has never been done since, but the period of extreme prices was very brief.



PARA RUBBER PRICES FOR EIGHTEEN YEARS (BASED ON HIGHEST NEW YORK PRICE IN EACH MONTH.)

RUBBER PLANTING INTERESTS.

PLANTING "PARA RUBBER" IN MEXICO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: You will find from the enclosure that we are executing an order of 100,000 *Hevea Brasiliensis* seeds for Mexico.

Our seeds are guaranteed 75 per cent. to germinate. Besides this, we are executing a large number of orders from Sumatra, Guatemala, Cuba, Java, Fiji, and other parts of the world for both seeds and plants of *Hevea*. The highest award was given to Pará rubber prepared by a native from our Kola estate last week, at the Agri-Horticultural show held at the government tropical garden at Heneratgoda. Out of many varieties of rubber yielding trees and creepers cultivated in Ceylon up to the present time Pará rubber turned out as the most profitable and the best adapted variety in all respects, answering to soil, climate, etc., from the sea level up to elevations of 3000 feet and over and cultivation extending yearly. Yours faithfully,

J. P. WILLIAM & BROTHERS.

Heneratgoda, Ceylon, July 13, 1903.

[ENCLOSED in the above communication is a copy of a letter signed W. P. Pinkham, manager of the Plantacion Ubero, in the state of Oaxaca, Mexico, stating that this company had decided to plant 100 acres in *Hevea Brasiliensis* during this year. The letter mentioned that from planting 52 seeds of this species, somewhat old, six weeks prior to writing, the writer had fifteen good seedlings about 6 inches high. The letter was followed by a telegram to Messrs. William, dated July 8, ordering 100,000 seeds.]

THE Singapore *Agricultural Bulletin* (July, 1903) contains the following: "As Pará rubber seeds have the reputation of very quickly losing their vitality, the following extracts from a letter from Mr. J. C. Harvey of Vera Cruz, Mexico, will, no doubt, be read with interest:

You will perhaps be interested to know, that of the twenty seeds of *Hevea Brasiliensis* you so kindly sent me, I have now fourteen thrifty plants a foot high. I feel very proud of them. The matter is worthy of record, as undoubtedly they are the first plants ever raised in Mexico.

"These seeds were from the Pará rubber trees growing in the economic section of the botanic gardens. They left Singapore on February 12, 1903, and arrived in Mexico on May 3."

EXPORTS OF CULTIVATED RUBBER FROM CEYLON.

OUR record has now been brought up to August 17 last, to which date, since the beginning of the year, the official statement of exports of the product of Ceylon rubber plantations amounted to 26,413 pounds. The total output in 1902 was 21,168 pounds, and in 1901 only 7392 pounds. At the London auction on September 4, several packages of "Pará rubber" from Ceylon sold at 4s. 6½d. to 4s. 8¼d., being equal to \$1.10 and \$1.13½ respectively. On the same date fine upriver Pará two years old sold only at 4s. 4d. [= \$1.05], the highest quotation for any grade of rubber from the Amazon.

BUENA VISTA PLANTATION CO.

[Plantation "Buena Vista," San Juan Evangelista, canton of Acayucan, Vera Cruz, Mexico. Office: Elkhart, Indiana—See THE INDIA RUBBER WORLD, March 1, 1903, page 193.]

At the first annual meeting (Elkhart, August 20) Edgar J. Hahn, plantation manager, personally presented his report on the operations from October 20, 1902, when the company took charge of a partially developed estate, to July 1, 1903. During this time 2125 acres of new land had been cleared; 825 acres

planted to rubber, 300 acres to sugar cane, and 500 acres made into pasture; additional accommodations erected for labor, the force since January 1 averaging over 500: carpenter and blacksmith shops, saw mill, and brick kiln erected; water supply, electric lights, and telephone service installed; and other improvements made. The 150 acres in sugar cane planted by the former owners yielded 7000 tons, which was ground on the plantation. The financial statement shows net profits (in Mexican currency)—

From operation of sawmill.....	\$ 3,519.08
From operation of plantation store.....	3,339.37
From proceeds of sugar cane crop.....	55,703.45

Total.....	\$62,561.90
Total, United States currency.....	27,703.83

A dividend was declared, payable September 1, equal to 14½ per cent. on the outstanding stock of the company. The number of \$100 shares sold had been 3392, amounting to \$339,200, but only so much of the capital ranks for dividend as has been paid in. R. P. Probasco retired as director, E. J. Hahn being elected instead. Milo D. Campbell, mayor of Coldwater, Michigan, was elected by the stockholders to inspect the plantation as their representative.

A NEW RUBBER TAPPING TOOL.

THE *machete*, or cutlass, unless in the hands of one very skillful in its use, is not an ideal tool with which to tap a rubber tree. All of the planters appreciate this, and many attempts have been made to invent something that shall be cheap, strong, simple, and practical. The illustration shows a tool of English



make that is now being tested on the rubber plantations in Mexico and in the East. The knife, which has its socket within the handle, can by a screw arrangement be quickly set to project beyond the guard any distance up to an inch and a half. The blade is of a good quality of steel, and the handle of gray cast iron strongly riveted. [Thomas Christy & Co., 25 Lime street, London.]

MEXICAN PLANTATION NOTES.

THE Vera Cruz Development Co. (Canton, Ohio), developing "La Esmeralda" plantation, in Vera Cruz, report the payment of a 4 per cent. dividend for the first six months of this year, in addition to 7 per cent. paid December 1, 1902, which was from the first year's production of "short crops."

=H. M. Moritz, *administrador* of the "Obispo" rubber plantation at Tuxtepec, under Maxwell Riddle, treasurer of the Obispo company, is a Scotchman by birth and ancestry, who, after an experience with fruit growing and cattle ranching in California, settled in Mexico, where he acquired a practical knowledge of Spanish and much facility in handling native labor before joining the "Obispo" forces.

=Mr. E. H. Switzer, secretary of the United Tropical Planters' Association of Mexico, is in the United States for a brief visit.

=The Tehuantepec Rubber Culture Co. have planted this season 630 acres to rubber seed, at stake, in addition to their large planting last year.

RUBBER HOSE AND COMPRESSED AIR WORK.

It is said that the largest single contract ever let in the world for construction was the subway railroad system now nearing completion in New York city. It comprised the most comprehensive system of rapid transit ever devised. For present purposes it is unnecessary to refer to the details and magnitude of this work, but it is a matter of interest to know that a vast portion of the work has been achieved by the use of pneumatic machinery and that the contractor, Mr. John B. McDonald, has referred to compressed air as "an indispensable adjunct to the construction of the subway." It was found early in the experience of the contractors, that steam was unsatisfactory as a motive power from the fact that the many steam boilers each involved an expensive licensed engineer and further, that the losses by condensation greatly reduced the pressure and interfered with efficiency. Compressed air has however been made easily applicable by a few first class compressing plants and the liberal use of superior rubber hose. No work ever undertaken has more thoroughly demonstrated the advantages of pneumatic machinery and its ready application over extended areas.

The work upon the New York subway is merely cited as an illustration. Except for the use of pneumatic machinery the cost of that construction would have been vastly greater and the time necessary for its completion much longer. It is only one instance, however, of the application of such machinery. It is a recognized feature now of all construction where iron is the material handled. The clatter of the pneumatic riveting hammer is heard continuously upon every modern building during the construction of the steel frame and upon every steel bridge. In the shipyard and in the machine shop the pneumatic tool likewise has become indispensable.

The pneumatic punch which is now in general use, prepares the plates at beams for the rivets and hammer. This implement, in itself, is a revelation in iron working. The old method in use, where high power hydraulic or steam punches were utilized, required heavy machinery for conveying iron along underneath the punch. According to the weight of the beam or plate this was heavy labor, required considerable power and the services of a number of workmen. The pneumatic punch is a small implement, weighing sometimes not more than 28 pounds. It is easily swung from a crane, can be placed anywhere in any position and one man or boy can manipulate it. It works rapidly, and more accurately than a power punch because it can be exactly placed. One workman can accomplish many times the amount of work in a given time

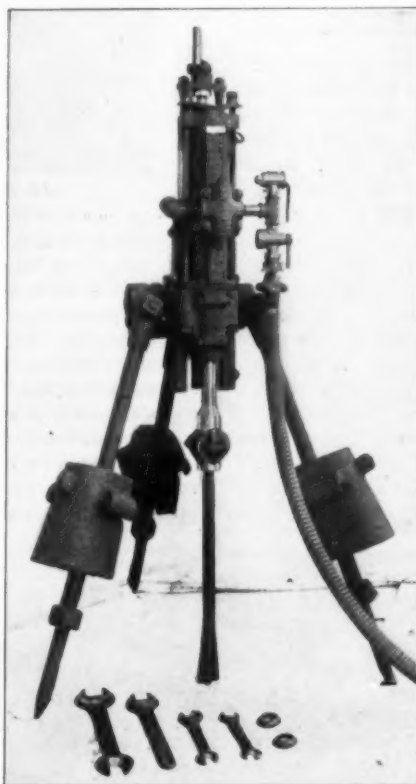
that under old methods required a gang of men. It can be taken up a smokestack or inside a boiler; for work on shipboard or upon tanks it is incomparable. The rubber hose will allow it to be placed anywhere that it is needed.

Even more important than the punch, however, is the riveting hammer. Its convenience and speed, and the superiority of its work, make one marvel how iron work was ever accomplished without it. It works with equal facility upon the top framework of a twenty story skyscraper and in the tunnel being driven under a river. The use of the substantial rubber hose makes it safe and reliable anywhere. The power can be generated at some point convenient to fuel and water but the work

is done just the same no matter how inconvenient the spot. For binding the plates of ships, for boilers, and for all work requiring closeness of joint it is incomparably superior. The secret of good workmanship in this character of employment is to head the rivet before it has time to cool. The contraction of the cooling process itself then binds tighter than any power has been able to do. Under the old system of the hand hammer the most expert workmen could not head the rivet in less than from twenty to thirty seconds and the rivet had cooled when the work was done. With the pneumatic hammer less than five seconds are sufficient and cooling process comes after the head is on, holding the surfaces together like a hydraulic press. One man does better work in five seconds than two formerly performed in thirty.

In heavy shipbuilding this convenience and celerity is of particular advantage. The increase in size of ships has rendered the plating so heavy that to draw it up in a satisfactory manner requires the use of a rivet too large to be properly driven by hand. By use of the pneumatic implement the operation is done quickly, before the rivet cools, resulting in drawing everything together firmly. The economy of the work is also a question of vital importance.

The statement is made that in building an ordinary lake steamship of 4000 tons, the saving in the riveting alone over hand work amounts to between \$4000 and \$5000. Other pneumatic tools secure equally beneficial results in shipyards. In all of the larger American establishments they are now in use for chipping, calking, beading, and drilling, and similar appliances are being introduced into shipyards abroad. The pneumatic hammer has found a field for itself wherever the service of a blow is necessary to labor—from the long stroke heavy implement that will in a few seconds head a 1¼ inch rivet, to the light hammer for delicate carving and engraving that weighs no more



AIR DRILL.



PNEUMATIC HAMMER



AIR DRILL WORK IN MINING.

[Showing its great adaptability to positions not easy of access.]

than a pocket pistol. The pneumatic tool has revolutionized construction work from the digging for the foundation to the carving on the capstones of the finished structure. It has decreased the time necessary, greatly cheapened the cost, and immeasurably added to the efficiency of the work. Besides these merits must always be considered the incomparable merits of adaptability and convenience. The pneumatic tool can be placed anywhere, in any angle, at any height, at any depth. It must be apparent that this development, that this advancement in the art of construction is entirely dependent upon the use of rubber hose. It is the flexibility, the placibility, of the tool that is its most meritorious feature. The rubber hose attachment is indispensable to its value. A pneumatic hammer, or punch, or chipper, or drill with only a fixed and rigid attachment would be of little service. The expense in time and labor of moving and changing connections, or in conveying material to the tool would rob it of the greater part of its present superiority over hand work. The secret of its success is its hose attachment. As its uses spread, as new contrivances are devised to further utilize the power of compressed air the development of the rubber industry that is its indispensable adjunct must correspondingly expand. The volume of business for this purpose is increasing every year, and the use of pneumatic implements is perhaps as yet only in its infancy.

The character of rubber hose needed for use in pneumatic machinery is of the very best. It requires vastly more strength and the use of more rubber and a better quality than ordinary hose. The inner tube of the hose must be thick and perfect, the four ply of heavy duck well frictioned, and the cover strong and the whole well vulcanized. In addition, the cover is



PNEUMATIC TOOLS IN SHIPBUILDING.

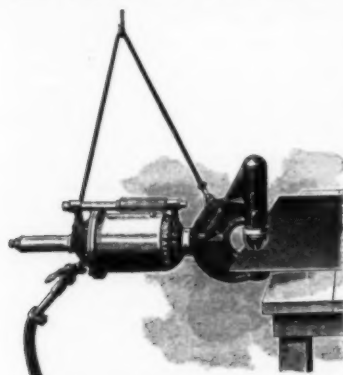
[Riveter at work on Side Framing.—Courtesy of the *Scientific American*.]

generally protected by wire or other material to save wear and tear when being dragged about over rough surfaces. Among the most satisfactory hose in this service is that covered with woven marline or woven cotton protection. This is considerably more expensive than plain hose, but is more durable and therefore more economical in the end. Cheaper hose is in use which has a plain canvas covering and there are numerous grades of wire protected hose, including the loosely wire wound, the flat wire wound and a recent patent embracing a woven wire armor which entirely covers the exterior rubber. It is very rare that this character of hose bursts from pressure within, but unless it is adequately protected it not



VARIOUS APPLICATIONS OF PNEUMATIC TOOL WORK.

infrequently breaks through from exterior causes. The main cause of destruction however is from within. The pulsations



A GOOD TYPE OF PNEUMATIC PUNCH.

of the air as the pressure is on and off the implement has an effect upon the vulcanized bond between the inner tube and the duck layers. The inner tube sooner or later—according to the quality of the manufacture—gradually loosens from the duck and when it once becomes loose is apt to fold upon itself and choke the hose. Such a condition is practically beyond remedy. This action of

compressed air upon hose is more destructive than the action of water, even when the latter is at a higher pressure.

The manufacture of pneumatic tools has attained very large proportions, being carried on, in the United States particularly, in a number of extensive plants. Recently the more important of these have been brought under the control of one large corporation—The Chicago Pneumatic Tool Co.—organized under the laws of New Jersey with \$7,500,000 capital. The president of this company is J. W. Duntley, who is one of three members of an executive committee, the other two being Charles M. Schwab, late president of the United States Steel Corporation, and C. H. Matthiesson, the president of the Corn Products Co., some further reference to which, by the way, appears on another page of this issue. Close relations exist between this combination and the Consolidated Pneumatic Tool Co., Limited, of London, on the board of which Mr. Duntley has a seat. These two important organizations control the greater part of the business of supplying pneumatic tools to the world. Great mining enterprises call for large outfits of pneumatic tools, and most of the shipyards now in operation have pneumatic equipment. In addition to these large enterprises, opportunities are offered in almost every form of industry, except those devoted to the production of goods by machinery, for the use of pneumatic tools in some form or other, all of which tends to maintain a very important demand for rubber hose which, a few years ago, did not exist.

"NOMENCLATURE OF RUBBER."

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the September issue of your Journal your British correspondent refers to an address I delivered at the recent Congress for Applied Chemistry at Berlin. According to your correspondent I, in the above mentioned address, "indulged in a tirade" against the terms India-rubber, Gum, and Caoutchouc, describing them respectively as childish, ignorant, or barbarous, and he represents me as having proposed the term polyprene in their place generally. Your correspondent's notions regarding the meaning of the term "tirade" must considerably differ from the accepted meaning of this term, as my "tirade" was delivered in the form of an appeal to the workers in the chemical domain of the India-rubber field to agree upon a term for India-rubber lending itself to the purpose of rational chemical nomenclature. The words actually used by me, in as near as possible literal translation, are as follows:

Turning now to the chemical problems of India-rubber, I desire to

appeal to all co-workers on the question of nomenclature. We cannot seriously propose to introduce into chemical nomenclature the barbarous term of Caoutchouc. The childish English designation of India-rubber, or the ignorant German term of Gummi (gum) are not even thinkable in this relation. I myself have proposed and used the term of Polyprene which for the purpose in question appears permanently acceptable, all members of the India-rubber group being interpretable as polymers of isoprene, the constitution of which is known with absolute certainty, but I should be pleased to accept any better designation which might be proposed.

From this it will be seen that the term polyprene was proposed "for the purpose in question"—i.e., the purpose of chemical nomenclature. The hare-brained idea of this term having been suggested for every day use in manufacture and commerce is purely the product of your correspondent's imagination, and his facetious remarks anent this proposal can refer to himself only.

That the word Caoutchouc is "barbarous" is for everybody sufficiently demonstrated by its origin, and the childishness of the term India-rubber must strike everyone on considering the industry it is applied to. There is, however, no doubt that the term Gummi (gum) is the most objectionable of the three, as it classes the material in question together with the gums, or gum resins. If such erroneous classification, which is implied in that term, is not "ignorant" I should like to know what it is. The attempt of using any of the above terms as part of our chemical nomenclature simply leads to grotesque results.

Your correspondent, in his own way, is quite right that the want of a rational designation for India-rubber will not bar in the least the progress of the chemical investigation of this substance, but it will in time lead to a great deal of inconvenience and confusion in the matter of terminology. If your correspondent were aware of the herculean labor encountered, now some time ago, by the "Geneva Convention" in the attempt to purge and systematize chemical nomenclature, or if he could remember the confusing changes which became necessary with the expansion and development in recent years of the chemistry of the sugars, and of the so-called heterocyclical compounds—two very large and important classes—he might well come to the conclusion that he would with advantage have tempered his somewhat misplaced irony with a little wisdom.

I remain, Yours very truly,

CARL OTTO WEBER.

Manchester, England, September 14, 1903.

"ROOT RUBBER FROM NIGERIA."

MR. JOHN HOLT, of John Holt & Co. (Liverpool), Limited, writes to THE INDIA RUBBER WORLD: "I enclose a bit of bark taken from a root that has been sent me from the Niger. It is a vine growing about 8 feet high. The vine produces no latex, but as you will observe, there is plenty of rubber in the bark of the root. I have not yet been able to ascertain what scientific name this plant bears."

This note reminds us of the fact that the forestry regulations of Southern Nigeria prohibit the extraction of rubber from the roots of plants, but this step doubtless was taken in ignorance of the existence there of plants containing rubber only in the roots. There is no evidence, however, that any of the Niger rubber yet exported is the product of the plant mentioned by Mr. Holt.

The government plans extensive rubber planting in Southern Nigeria. The colonial report for 1901 (lately printed) mentions the creation of extensive rubber nurseries and the collection of 3,000,000 rubber seeds to take the place of the existing seedlings when transplanted.

"RUBBER FROM CORN OIL."

IT will be remembered by those who follow the newspapers, that some years ago the daily press chronicled the marvelous discovery that rubber could be manufactured from corn oil, and jumped to the conclusion that in a very short time the patient rubber tree would be put out of business. Rubber manufacturers, and indeed those who manufacture corn products, had not such visions, but understood that the new product was simply a rubber substitute. That this substitute would be produced in larger quantities than any other and be shipped in carload lots all over the world was not, however, forecasted by rubber manufacturers. Such now, however, is the case, the popularity of the material being due to its usefulness as a filler and insulator and its absolute harmlessness when widely used, besides which it has the advantage of low cost.

There is perhaps another reason for the remarkable success that this substitute has enjoyed, and that is the manner in which it has been made and marketed, and that leads up to a brief description of the company—the Corn Products Co.—one of whose minor products it is. This company is a huge corporation, which would perhaps by many be called a trust, with a capital of \$80,000,000 and operating a dozen plants, all of which are located in the corn belt of the United States. These plants manufacture glucose, sugar, starch, dextrine, syrup, glycerine, cattle feed, corn oil, and so on. One of their new products, which is now being widely introduced, is "Karo" syrup, which is likely soon to be known in every household. The company is under the personal management of Mr. C. H. Matthiessen, who is the president, and who was in reality the creator of it. He is notable for having up to date plans, and a great staff of capable assistants and chemists.

As was mentioned above, the Rubber Substitute is a by-product, but has been developed as if it were a single manufacture in the Corn Products Co., and it is all made at the Chicago plant; one grade only being supplied and the price to consumer being based on the market price of corn oil. When one remembers that but a few years ago a five barrel order for corn oil substitute was a large one, and learns that as developed by the company above named it is now sold in carload lots, the story of a very interesting development is told.

SO-CALLED "MANJAK" FROM TRINIDAD.

THE reference to "Manjak as a Substitute for Rubber" in the July issue of THE INDIA RUBBER WORLD was based upon a report by the commercial agent for Canada at Port of Spain, to the effect that large quantities of this material had been discovered in Trinidad, and that it was being shipped to the United States, where a use for it had been found in connection with India-rubber. Later this official made a further report in the same vein, besides which the British colonial report on Trinidad for 1901-02 mentions the discovery of "manjak in paying quantities" on that island.

Inquiry has disclosed the fact that considerable of the material referred to had been brought to New York by Messrs. Arkell & Douglass, shipping and commission merchants, at No. 11 Broadway, who informed THE INDIA RUBBER WORLD that good deliveries had been made to a certain local firm of dealers in shellac, varnishes, and the like, and that their understanding was that it was being sold for insulating work and also for a floor covering. THE INDIA RUBBER WORLD was denied any information by the latter firm, but there is reason to doubt that any important amount of the material has gone into use in connection with rubber or as a substitute for rubber. It now

appears that the Trinidad product is not even true manjak, the nature of which was referred to in our July issue. The following letter has been received from an expert in asphalt products:

TO THE EDITOR OF THE THE INDIA RUBBER WORLD: In reply to your letter of September 16, asking me in regard to the discovery of Manjak in the Island of Trinidad, I would say that, although I am familiar with the bituminous deposits of the island and generally have new materials brought to my attention when discovered, I have never seen anything that approaches Manjak in quality or characteristics which was found in Trinidad. Small veins of glance pitch have been discovered from time to time, but have not furnished a commercial supply. Of late a vein of Grahamite has been discovered near San Fernando, Trinidad, but this material is very far removed in its character from good Manjak, as can be seen from the data on an accompanying sheet. This Grahamite is inferior to Manjak for varnish purposes. It will certainly not yield a rubber substitute which has any value commensurate with its cost. The San Fernando material is that which is sold on the market as "Trinidad manjak." Very truly yours,

CLIFFORD RICHARDSON,

Director New York Testing Laboratory.

Long Island City, N. Y., September 17, 1903

RUBBER CEMENT IN SHOEMAKING.

THERE is an interesting history connected with the rubber cement industry which I collected from a young man who is now in the third generation of cement manufacturers. The first cement ever made for the shoe industry was manufactured by the late W. W. Hadley in 1850. The rubber at that time was prepared with ether and chloroform and turpentine. It was used for making "Compo" shoes by William Harris of Marblehead, Massachusetts. For a long time after McKay shoes were made it was considered too expensive an article to use, and shoemakers used what was called a channel wax.

This was used until the middle of the '60's, although the first cement made with naphtha was made by Jacob Hadley, of the firm of Hadley & Pierce, of New Bedford, Massachusetts, who by the way, were the first to produce naphtha from kerosene oil. The first cement put upon the market cost \$6 a gallon. The materials at that time were very expensive and the processes of making were crude and very slow; but Yankee ingenuity began to assert itself in this as in everything else.

New and improved methods were brought out, which brought the price down to \$4 a gallon. There it remained for some time, until competition has brought it down to a very low price, although there are many different varieties of rubber. Pará rubber is used mostly for making high grades of channel cement. - - - It is an easy matter to detect poor rubber cement. Cheap rubber is chemically composed of 87.5 parts carbon, 12.5 parts hydrogen. Place a bottle of this cement in the window exposed to the sun and in a few days it will go back to naphtha. Pará rubber acts differently. The naphtha will evaporate, leaving only pure Pará rubber.—*Shoe and Leather Reporter.*

FRENCH TALC AND RUBBER.—As far as the rubber business is concerned, the use of talc commonly and inaccurately known as soapstone as a support during vulcanization, is an old story. With the advent of dipped goods such as finger cots, gloves, etc., a new use has been born; the talc becomes a dry lubricant and a package of it goes with every pair of gloves accompanied by the request that it be liberally used. As a matter of fact the glove is most intractable without it.

THE Connecticut Asbestos and Mining Co. have been incorporated under the laws of Maine, with \$300,000 capital, to control what is said to be the only asbestos mine in Connecticut,

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

IN the August number of THE INDIA RUBBER WORLD appears a communication entitled "Obscure Causes of Factory Fires" which invites a word of comment, because the author seems to have cast his net of suspicion rather too widely, and to have caught in it substances which are out of place therein. He says litharge, whiting, and lamp-black are all used in practically all rubber factories, and all of them are subject under wrong conditions to spontaneous combustion. Now it seems to me that this statement is calculated to cause unnecessary alarm in the factory, as far as litharge and whiting are concerned, because not only have I never heard of these bodies evincing a tendency to spontaneous combustion, but also because it is difficult on chemical grounds to understand how they could act in this way. It would have aided to completeness if the author had stated the particular wrong conditions under which these bodies become dangerous, but information on this interesting point is withheld. With regard to lampblack, the case is different, and the hand of warning is rightly extended. Lamp-black as used in rubber factories is of various origins and densities, and although it is difficult if not impossible for any one observer to speak precisely, I may say that in my own experience it is only the heavy variety prepared by the carbonization of cellulose in retorts that needs to be looked upon with suspicion. This variety unless carefully prepared with the view of preventing spontaneous combustion may easily give rise to this phenomenon, and it is always advisable to buy it in small casks and to store these in a place where an accident would not be likely to lead to a general conflagration. However, if carefully prepared it is safe enough, and it is a long time since I heard of any trouble in a rubber works from this source. The gas blacks so largely produced in America do not seem at all liable to spontaneous combustion to judge by British experience of them. The reference to the possibility of a bubble or flaw in a window pane acting as a burning glass is not at all superfluous, and I have every reason to suppose that a case in my experience where a cold curing machine was fired was brought about by this agency. With regard to insurance, the British firms make a strong distinction between the different portions of our large factories, those few rooms where bisulphide of carbon or naphtha is used being either not insured at all or only at a prohibitive rate, while the rest of the factory comes under lenient treatment. With regard to spontaneous combustion of coal used as fuel, it does not seem at all necessary to consider the question, it being very rare for stocks to be accumulated weekly as daily delivery being the rule.

In an important paper on "Problems in the Fat Industry" (*Journal of the Society of Chemical Industry*, June, 1903) Dr.

Lewkowitsch makes a brief reference to the rubber substitute industry. He says:

"Oils vulcanized with sulphur have already acquired commercial application, on account of their cheapness, as witness the sad state in which we find our India-rubber tubing after very short use." This statement no doubt applies correctly to a good deal of the elastic black rubber tubing which used to be made of pure rubber, but as regards a good deal of the red and grey tubing used in chemical laboratories I think the defects are due to over compounding with mineral rather than to the use of substitutes. Another remark

of his, although not particularly original, is of sufficient importance to be reproduced verbatim: "Vulcanized fish oils have also been brought somewhat prominently into the market, and it must be a matter for regret that the working out of the processes for the preparation of such products as Volenite, Maponite, etc., have not been completed on a small scale before they were placed before the public, as non-success only serves to discredit further technical efforts." With regard to this paragraph, with which I cordially agree, it recurs to my mind that Dr. Lewkowitsch's name appeared on the prospectus of Volenite, though only in connection with a certificate as to the cost of treating the oil. I don't think he ever pronounced upon the capabilities of Volenite, a fact which no doubt contributes to his peace of mind at the present time, as no expert cares to be associated with vain prophecies.

THE recent patent of The Rubber Balloon Co. of America (Brooklyn, New York) for a seamless balloon is of interest. As stated in the specification, the ordinary method of manufacture as carried out in England by welding the seams together by hammers leads to a considerable loss during the inflation process. From a hygienic point of view the seamless process seems to me desirable, because of the deafening noise the workers—generally girls—are subjected to by the rapid work of the machine hammers. Possibly, as applied to balloons, the process is patentable, though the idea of the manufacture of seamless articles from rubber solution by applying the latter to a mold of the required shape is not at all new, it having been carried out in England at least fifteen years ago. Some firms were more successful than others, a quick-drying naphtha being an important desideratum. Of course it is one thing to patent a process and another to ensure its satisfactory competition with existing processes; those who still use the jointed sheet rubber process will therefore look with interest for the practical results of the Brooklyn firm. Whether it is because the business does not offer sufficient attractions financially or because the *rationale* is not well understood I am unable to say, but the manufacture of balloons is, I believe, still limited in Great Britain to two firms, and one of these does not manufacture the raw material itself. The home of this class of business is to be found in France, the rubber having for many years, at any rate, been supplied by the two large Manchester firms of Charles Macintosh & Co. and David Moseley's Sons.

A CONSIDERABLE change has come over this business in the last few years. Formerly it was all made in the rubber works and sent out in tins, but now owing to the larger retail demand among cyclists and electricians, and also to the increased cost of railway freight, the larger number of dealers make their own, buying the masticated rubber from the rubber works. This has brought about a change in the quality of the rubber used, though I am not prepared to say that the change is altogether for the worse. Competition has led practically to the exclusion of soft fine Pará, and a mixture of fine and Congo, and, indeed, in some cases, Congo alone, is used. For cyclists' use a solution containing 11 per cent. of rubber is usual and this can be made by dealers at about 6 pence per pound, and this put up in tubes is retailed at about 2 shillings per pound. The profit here is not so large as it might seem, because of the

RUBBER
FACTORY
FIRES.

RUBBER
BALLOONS.

INDIA-RUBBER
SOLUTION.

DR. LEWKOWITSCH'S
REMARKS.

labor involved in filling the collapsible tubes. For other purposes the solution is still supplied by the rubber works direct; for instance, in the case of the carriage department at Woolwich, where the solution has to stand severe tests and must contain not less than 18 per cent. of rubber. The fact that cyclists' solution is now so largely made from African rubber instead of from fine Pará has proved rather a blow to those who commenced making solution from certain kinds of unvulcanized waste of first quality. The solution from this source could compete all right with the Pará product, but not with Congo, considering the attendant expenses. With regard to the freight question, though now somewhat a matter of ancient history, it may be mentioned that the efforts of India-Rubber Manufacturers' Association to obtain ameliorations in the conditions of railway transit with respect to large and small quantities of solution were attended with success. The alterations have now been in force six months, and as far as I am aware nothing has happened to cause the railway companies to regret their action. It certainly seems as if there has been too pronounced a tendency with both railway companies and municipal authorities to look upon rubber solution with the same eye as they regard dynamite. No doubt the absence in recent times of any catastrophe has done a good deal to allay apprehension in the official mind, and we may expect a lessening rather than an increase of vexatious restrictions.

DESPITE the large scale on which the operations of the North Western Rubber Co., Limited (Liverpool) are carried, I do not find that any of the previously existing firms in that line in England have closed their doors. In fact from reports made to me I understand that their position has not been at all affected. One reason for this is no doubt that the amount of recovered rubber used at the present time is larger than it was and shows a tendency to increase. Another reason may perhaps be found in the fact of the rather high prices asked by the American firm, though in saying this I do not wish to insinuate that the prices do not closely approximate to the quality. The New York quotations for rubber scrap as given in THE INDIA RUBBER WORLD are interesting to dealers on this side, as in several instances they show a difference from what obtains here. With regard to the demand for rubber scrap the rubber works are buying more and more of it from their customers, these now expecting it as a matter of course. For some time now the demand for drab waste has been greater than the supply, while the conditions are reversed in the case of the black. It is somewhat unfortunate that there is a good deal of very good quality too, in the market, which though not black; does not quite pass muster for drab owing to a small amount of litharge having been used in the mixing. Considering the very poor quality of the material, it is somewhat surprising that old tennis balls obtain such good value as waste, but probably the limited supply of drab available accounts for this.

THE instrument known as Fletcher's flexible bellows comes up for criticism in the last report of the Inspector under the Alkali acts, and a word or two with regard to it may not be superfluous. The invention of Mr. A. E. Fletcher, late chief Inspector under the acts referred to, it has for many years served a useful purpose in enabling the various inspectors to take samples of chimney gases for test in a much shorter time than by any box aspirator. The form is accurately described as that of a concertina; into the details of its use I need not enter except to say that the absorbent chemical is introduced into the bellows and is shaken up with the aspirated gas. The standard capacity is $\frac{1}{2}$ of a cubic foot, and it is made by the Silvertown company, a royalty

being paid to Mr. Fletcher. At first the outside was protected by a coating of canvas attached to the rubber, but rubber alone of the best quality is now used. It is not surprising that, owing to the use of these bellows in chemical works, they sometimes show premature decay, which is not always easy to explain, but the users of them have found that they last longer when in regular use than if put away for some months. I do not propose to go deeply into the scientific matter which Mr. Linder discusses in the alkali report. The main result, and what does not cause me any surprise, is that he finds the inner surface of the rubber to be covered with a resinous body which acts like an acid. This is of course the ordinary product of the oxidation of rubber and it is easy to understand that its presence might interfere with test made for acidity in gases where alkaline absorbents are used. Some of the inspectors use aqueous hydrogen peroxide, which I understand does not damage the rubber, though an ethereal solution does so energetically. It may be contended that this subject, to which I have devoted some considerable space, is hardly of sufficient general interest, but at any rate it deals with an application of rubber, and one which is unfamiliar to more than one or two members of the trade.

ALTHOUGH only last month I referred to this topic in a pessimistic strain, it would appear from information derived from one of our most important firms that a demand has set in for good quality material, the increased amount of rubber now being used in this branch being assigned as one of the causes of the present high price of rubber, or rather as a reason why the price should not be expected to decline at the moment. That a revival has come about is further evident from what is to be seen in the streets and in the windows of the leading outfitters who a twelvemonth ago had ceased to exhibit the rubber coat. No doubt the very wet summer we have had has caused a return of allegiance to an old friend.

FOR the future this company will be known under the extended title of the Irwell and Eastern Rubber Co., Limited.

THE latter concern was founded some years ago by the Messrs. Colsall in East London and has an important metropolitan connection. I have previously referred to the extensions in progress at the works of the Irwell company, and am informed by the directorate that these are almost completed and that the past delays in executing orders consequent on insufficient premises will now be obviated. If it is permissible to comment on the extensions taking place at this and one or two other works, one is forced to the conclusion that the personality of the guiding spirit is a more valuable asset than what usually figures under this heading in an accountant's certificate.

THE practical monopoly so long held by Messrs. Ayres in the supply of balls for tournaments and clubs has been seriously assailed this season and last by Messrs. Slazenger, whose balls have been adopted by the committees of the leading tournaments. Neither of these firms make the ball themselves, merely doing the covering. As far as ordinary club use goes, Slazenger's are in favor because they clean well, whereas Ayres' are reported as not cleaning at all well. This is an important point in the case of town clubs, where the balls get dirty very rapidly. At the same time those who favor Slazenger's because of this attribute, admit that Ayres' ball has rather more life about it than the other, which appears to be of a heavier build. As far as the washing is concerned, the difference in behavior can only be attributed to the quality of the material used in the textile covering.

THE
MACINTOSH
TRADE.

THE IRWELL
RUBBER CO.

LAWN TENNIS
BALLS.

WASTE
RUBBER.

INDIA-RUBBER
BELLOWES.

"FIELD DAY" OF THE APSLEY RUBBER CO.

THOSE who have followed the career of the Hon. Lewis D. Apsley will recollect that while a member of the Fifty-third Congress and a prominent member of the House committee on labor, he was one of those who were active in making the first Monday in September in each year a national holiday. It was, therefore, very fitting that, on September 8 last, when the Apsley Rubber Co. were congratulating themselves on the completion of another large addition to their rubber shoe plant, at Hudson, Massachusetts, the day should be specially observed at that place. It was done by planning what was very happily called Field Day, followed in the evening by a banquet and ball. No man in the rubber trade knows better how to plan such an affair than Mr. Apsley, and in this instance his decided faculty for organization was apparent. Committees were chosen from the foremen and leading employes of the factory, so that the long and interesting program of sports and entertainment was carried out perfectly, without delay or friction.

The sports began at 10 o'clock in the morning, with a bowling contest open for both ladies and gentlemen. This was followed by a very hotly contested polo game in the Hudson armory, and that in turn by two basket ball games—the first between the employes of the cutting room and the making room, and the second between the junior arctic makers and the junior stock carriers. At 1 o'clock the officers of the company, the employes, and the invited guests assembled in the public square, and, led by the Concord brass band, marched to Riverside Park. A few of the guests rode, but the officers of the company, headed by Mr. Apsley, marched with the procession, each carrying a special flag furnished by the committee on decoration. The entertainment at the park consisted primarily of a base ball game between teams from the clothing and last and the boot and shoe departments. The former elected to call themselves the "Has Beens" and the latter the "Cranks." The score was 11 to 9 in favor of the Has Beens. Other sports which were enthusiastically applauded were the hundred-yard dash, the fat men's race, one mile bicycle race, the ladies' bicycle race, two mile bicycle race, ladies' foot race (50 yards), broad jump, and hop, step and jump. For all of these suitable prizes were awarded.

Not only were all of the employes of the Apsley Rubber Co. present at the park, but a host of townsmen and invited guests joined in celebrating Apsley Field Day, to which the usually quiet town of Hudson

seemed to have wholly devoted itself with enthusiasm. Not forgetting the very normal hunger and thirst that such a gathering engenders, Mr. Apsley had purchased all of the bananas, peanuts, and popcorn that the town afforded, and, arranging a temporary bar under the grand stand at the park, had a half dozen active young chaps dispensing pink lemonade to all who were athirst.

At 6.30 in the evening the company gathered in the new rubber factory building, which had been handsomely decorated and arranged for the convenience of all.

On the first floor was a gentlemen's reception room and on the second floor a reception room for ladies. The third floor was reserved as a ball room, and the fourth for a variety of indoor games. The fifth was filled with tables for the banquet, seats being arranged for some 600 guests, while the sixth floor was utilized as a smoking and card room.

The banquet, as might have been expected, was first class in every detail. At its close Mr. Apsley arose and said:

EMPLOYEES, LADIES, AND GENTLEMEN: Let me extend to you the best wishes of the Apsley Rubber Co. and assure you it is a very great pleasure to have you here under these environments. We are thankful for the beautiful day, as it has made it possible for a lot of fun and pleasure. The friendly games we have engaged in have been fully

enjoyed by one and all, and they have brought to our notice some athletic wonders, but I fear, as president of the company, I made a slight mistake in affording so great an opportunity to Miss Lynch, Mrs. Blackler, Mrs. Murphy, Messrs. Perkins, Walsh, Wascott, Peters, Greenache, Riley, Hickey, Enos, Galvin, Kuhlthau, and Mahoney to show their skill and ability as athletes. They are wizards; but let us hope that neither the reputation they have made nor the prizes they have received will cause them to desert their old occupation and say "Good-bye" to us.

I will not detain you from the other pleasures that have been provided for you with any lengthy speech. I certainly hope that the evening's pleasures will be equally enjoyed by one and all. I must, however, congratulate you, employes, also the town of Hudson, on the completion of

this second large addition to the rubber boot and shoe plant within two years, which now gives us the capacity to make from 12,000 to 15,000 pairs of shoes per day. This increase ranks our plant as one of the large manufacturing establishments of the country. The phenomenal success and growth in so short a time is marvelous.

I can only attribute this success and development to two things, namely: First, the management of this company, as you employes know, has had the liberality and courage to use the best rubber and plenty of it in the manufacture



PROCESSION OF EMPLOYEES THROUGH WOOD SQUARE.



MR. APSLEY AS BASEBALL UMPIRE.

of their boots and shoes, and you know they have not cheapened their compounds as the price of rubber advanced.

Secondly, but by no means second in importance, is the fact that you, our employes, have put the work into the making of the shoes. Your faithfulness and intelligence have gone into the work, and as a result of these two all important factors, our goods have given splendid service, which accounts for our ability to increase the business and thus give you



PRESENTATION BANNER.
(With Portrait of Mr. Apsley.)

Bailey arose and, on behalf of the employes, addressed President Apsley, recalling the unusually kind consideration which the Apsley Rubber Co. had always shown to its employes, and saying how much the latter had appreciated the same. He recalled that, fourteen years ago, when the completion of the mackintosh factory building was celebrated by a banquet and ball, he had the pleasure of expressing to Mr. Apsley on behalf of the employes their sentiments of respect and regard for their employer, at which time they placed a clock in the office, the faithful ticking of which might be a constant reminder of the pleasant relations then existing. He had now, on behalf of a larger force, the honor to ask Mr. Apsley's acceptance of a banner now to be unfurled.

At the close of the speech, at a signal, a magnificent banner was unveiled, upon which appeared a portrait of the founder of the company. Although taken completely by surprise, and much touched, Mr. Apsley accepted it, responding in a few well chosen words. At the close of the banquet those who desired



THE APSLEY RUBBER SHOE FACTORY.
[The new six-story addition in the foreground.]

the steady employment you have had. So, let us resolve to continue in the same wise course, the Company on their part keeping up the quality, and You keeping up your interest, and if possible put an extra roll in when making the goods, knowing that it means success to this business and permanent work for you, and in a short time we will outgrow this addition and will be wanting more room.

As stated in the beginning, you, one and all, have our best wishes.

After the applause that followed his remarks, Mr. Milton T.

to dance did so, while others took part in the great variety of games that had been provided for. The festivities of the evening were kept up until a late hour—to allow for which the factory was not to open until a late hour the next morning—and all present were enthusiastic in their appreciation of the day's unalloyed pleasure. Mr. Apsley remained until the end of the program, but Mrs. Apsley, who had been present at the banquet and the dancing, with a party of friends, left a little earlier.

In handling all the details of the exercises day and evening, there were some twenty committees employed, the moving and active head being Mr. Apsley, his efforts being most intelligently seconded by Messrs. William B. Loughton, H. C. Wagner, and Milton T. Bailey. All of the local newspapers were represented among the guests as well as Boston papers. There were also present: E. S. Giles, of the *Chicago Shoe Trade Journal*; George E. B. Putnam, *Boot and Shoe Recorder*, Boston; Wendell Gammons, *Shoe Retailer*; and the Editor of THE INDIA RUBBER WORLD.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of July, 1903, and for the first seven months of the calendar year, for four years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
July, 1903.....	\$ 66,821	\$ 78,320	\$ 213,591	\$ 358,741
January-June.....	407,863	263,463	1,246,363	1,917,689
Total, 1903.....	\$474,684	\$341,792	\$1,459,954	\$2,276,430
Total, 1902.....	386,105	355,092	1,116,558	1,857,755
Total, 1901.....	351,649	291,356	1,073,822	1,716,827
Total, 1900.....	317,726	251,525	861,627	1,430,878

SEVEN MONTHS FOR LAST TWO YEARS COMPARED.

Gain in belting, packing, and hose.....	\$ 88,579
Gain in "All other rubber".....	343,396
Loss in boots and shoes.....	13,300
Net gain in 1903.....	\$418,675

CANADA.

OFFICIAL statement of values of dutiable imports of manufactures of India-rubber and Gutta-percha for three fiscal years [July 1 to June 30]:

FROM—	1900-01.	1901-02.	1902-03.
Great Britain.....	\$155,384	\$217,477	\$393,321
United States.....	432,640	521,963	571,687
Other countries.....	21,858	31,986	25,054
Total.....	\$609,891	\$771,426	\$990,062

The value of imports of crude India-rubber and Gutta-percha reclaimed rubber, and rubber substitutes, is given at \$1,986,913 for 1900 01; at \$1,656,275 for 1901-02; and \$1,824,705 for 1902 03.

Imports of Waterproof Clothing for the last fiscal year amounted in value: From Great Britain, \$357,130; from the United States, \$54,386; from other countries, \$86; total, \$411,602. Imports of Mackintosh Cloth amounted to 465,380 yards, of the value of \$92,285.

So much has been said regarding the heavy cost of automobile tires, said to be equal to 4 or 5 cents per mile, that it is most satisfactory to hear from Charles J. Glidden, the first automobilist to cross the Arctic circle, who in writing lately from Kommis, Sweden, gives his total mileage as 3596, with one puncture only, and no expense for repairs at all.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED AUGUST 4, 1903.

- N**O. 735,065. Exercising machine [with elastic tension members]. W. H. Chellis and F. W. McAnanny, Racine, Wisconsin.
- 735,255. Detachable tire. H. E. Irwin, Galesburg, assignor to Irwin Rubber Co., Chicago, Illinois.
- 735,322. Horseshoe. H. Walker, P. S. Walker, and J. Hamer, Charlton, England.
- 735,329. Vehicle wheel [with resilient tire]. R. O. Wilcox, Wichita, Kansas.
- 735,373. Vehicle tire. C. L. Henderson, Berlin, Canada.
- 735,401. Hose coupling. J. R. McFall St. Louis, Missouri.
- 735,404. Nozzle and nozzle device for fire hose. E. S. Osborne, assignor to said Osborne and J. N. Martin, trustees, Chicago, Illinois.
- 735,622. Cushion tire. J. H. Toole, Chicago, Illinois.
- Trade Mark.*
- 4,880. Fountain bath brushes. The Allen Manufacturing Co., Toledo, Ohio. Used since November, 1902.

ISSUED AUGUST 11, 1903.

- 735,799. Hose handler and clamp. T. McGill, Paterson, New Jersey.
- 735,876. Hot water bottle [having side walls united at intervals by eyelets, consisting of short lengths of tube made of the same material as the body of the bag]. J. Holland, assignor to Goodyear Tire and Rubber Co., both of Akron, Ohio.
- 735,883. Cushioned base for receptacle [as bottle holders]. F. Keil, New York, and H. F. Keil, Bronxville, N. Y.
- 735,913. Weather strip. W. A. Scott, Evansville, Indiana.
- 735,989. Hose clamp. F. T. Lippincott, Newark, Ohio.
- 735,993. Sectional cushion tire. C. Miller, Binghamton, New York.
- 736,057. Hose and pipe coupling. A. Beatty, Pittsburgh, Pennsylvania.
- 736,072. Arm rest for crutches [with cushion formed of an inflatable tube]. H. S. Cole, Newtonsville, Ohio.
- 736,082. Attachment for rubber shoes [a flexible rib on the sole]. W. Foreman and G. R. Conger, Taylorstown, Pennsylvania.
- 736,089. Portable bathing apparatus. Lida V. Gray, Tarboro, North Carolina.
- 736,108. Hose coupling. G. P. Jones, Penticton, Canada, assignor of one half to M. K. Rodgers, Seattle, Washington.
- 736,111. Inhaling apparatus. T. Kautz, Bad Reichenhall, Germany.
- 736,184. Hose coupling. J. Whiteford, Pittsburgh, Pennsylvania.
- 736,229. Method of making hollow balls. Cleland Davis, U.S.N., assignor to Cambridge Manufacturing Co., a corporation of Delaware.
- 736,230. Golf ball. *Same.*
- 736,231. Golf ball. *Same.*
- 736,232. Golf ball. *Same.*
- 736,233. Golf ball. *Same.*
- 736,239. Device for smoothing rubber tires. A. E. Ellinwood, assignor to Goodyear Tire and Rubber Co., both of Akron, Ohio.

ISSUED AUGUST 18, 1903.

- 736,394. Rubber heel. F. M. Hilton, J. S. Hilton, and W. W. Hilton, assignors of one half to C. R. Grant, all of Akron, Ohio.
- 736,414. Pneumatic tire. W. P. Litchfield, Akron, Ohio.
- 736,584. Pneumatic tire. W. Corliss, Providence, Rhode Island.
- 736,638. Tire [for bicycles]. W. P. Scofield, assignor of one half to R. R. Livingston, both of Gainesville, Florida.
- 736,677. Resistance tube [lined with insulating material]. C. Bloom, Brooklyn, New York.
- 736,683. Anti-skidding device for vehicle wheels. S. Butler, Westbury-on-Trym, England.
- 736,710. Fountain pen. W. I. Ferris, Stamford, Connecticut, assignor to L. E. Waterman Co., New York city.
- 736,908. Hose coupling. C. Wright, assignor of one half to J. J. O'Shea both of Everson, Pennsylvania.

ISSUED AUGUST 25, 1903.

- 737,021. Submarine cable laying device. B. Roberts, Mobile, Alabama.
- 37,031. Golf ball. W. M. Short, Beckenham, England.

- 737,070. Eraser tip for lead pencils. W. H. Brownell, Battle Creek, Michigan.
- 737,205. Tire [solid, for vehicles]. E. B. Cadwell, New York city.
- 737,257. Hose coupling. H. Crump and L. Metz, Frank, Pennsylvania.
- 737,364. Dress shield holder. T. Davis, New York city, assignor to Canfield Rubber Co.
- 737,509. Bicycle tire cleaner. F. J. Smith, Springfield, Missouri.
- 737,559. Tire. C. Miller, Binghamton, New York.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

APPLICATIONS—1903.

- 14,914. A. E. Terry, Birmingham. Repair device for pneumatic tires. July 6.
- *14,947. H. J. Doughty, London. Vulcanizing, molding, and finishing of rubber boots and shoes. July 6.
- *14,948. H. J. Doughty, London. Apparatus for vulcanizing, molding, and finishing rubber boots and shoes. July 6.
- 15,052. R. Taaffe, Liverpool. Pneumatic tire. July 7.
- 15,172. L. Frankenstein and C. Lyst, Manchester. Golf ball. July 9.
- 15,202. A. G. Grossmann and G. K. Wollaston, London. Prevention of side slipping of pneumatic tired vehicles. July 9.
- 15,225. R. A. Harris, London. Pneumatic tire. July 9.
- 15,242. R. Wallwork and C. H. Wallwork, Manchester. Vulcanization of tire covers. July 10.
- 15,353. C. Grayson, Liverpool. Slip preventing cover for pneumatic tires. July 11.
- 15,371. P. Frankenstein & Sons, Limited, and I. Sugar, Manchester. Waterproof garments. July 11.
- 15,374. R. Wallwork and C. H. Wallwork, Manchester. Apparatus for vulcanizing tires. July 11.
- 15,427. J. Hamblet, Birmingham. Pneumatic tire. July 13.
- 15,428. J. E. Layton, London. Golf ball. July 13.
- *15,474. A. J. Boulton, London. Golosh or overshoe (N. P. Bowler, United States). July 13.
- 15,522. M. Stanley, Birmingham. Rims and tires for motor car wheels. July 14.
- 15,641. H. L. Galloway, Glasgow. Golf ball. July 15.
- 15,804. F. F. Warburton, Manchester. Pneumatic tire. July 17.
- 10,819. W. J. Barnes, Reading. Chain and link insertion for pneumatic tire covers. July 17.
- 15,832. John Hancock Nunn, London. Improvement in the manufacture of golf balls. July 17.
- 15,913. T. T. Vernon, Liverpool. Pneumatic tire. July 18.
- 15,965. A. Dales, Manchester. Horseshoe pad. July 20.
- 16,015. B. Higgs, London. Inner tube for tires. July 20.
- 16,104. I. Clifford, London. Protected pneumatic tire. July 21.
- 16,110. T. C. Crawford, London. Golf ball. July 21.
- *16,128. W. P. Thompson, Liverpool. Golf ball. (J. B. Marston, United States.) July 21.
- 16,143. J. B. Scammell and E. A. Muskett, London. Gutta-percha substitute. July 22.
- 16,160. J. Butler, Manchester. Pneumatic tire and wheel rim for motor vehicles. July 22.
- 16,234. J. McLelland, Glasgow. Pneumatic tire. July 23.
- 16,289. A. Niven, London. Protection for pneumatic and cushion tire. July 23.
- 16,338. W. M. Short, Beckenham. Golf ball. July 24.
- 16,417. E. F. Maitland, Rye, Sussex. Golf ball. July 25.
- *16,567. Raymond B. Price, London. Vehicle tire. July 28.
- *15,576. Raymond B. Price, London. Apparatus for mounting rubber vehicle tires. July 28.
- 16,630. W. Barratt, Manchester. Pneumatic tire. July 29.
- 16,800. C. A. F. Gregson, Birmingham. Golf ball. July 31.
- 16,861. J. A. Davies, Taffs Well, near Cardiff. Inflated rubber sole for boots and shoes. Aug. 1.
- 16,903. G. C. Marks, London. Self sealing composition for pneumatic tire. (R. Gayet, France.) Aug. 1.
- 16,958. J. Anderson, Dundee. Apparatus for testing elasticity of golf balls. Aug. 4.

- 16,982. P. M. Justice, London. Golf ball. Aug. 4.
 17,042. B. McGarry, London. Non-skidding appliance for pneumatic tires. Aug. 5.
 17,080. A. H. Bancroft, Church, near Accrington. Band fastener for pneumatic tires. Aug. 6.
 17,098. L. Azulay, Southwick. Inflated tire. Aug. 6.
 17,156. I. Frankenburg, Limited, R. J. Frankenburg, Jr., and F. H. Betteridge, Manchester. Rubber solution or compound. Aug. 7.
 17,160. E. D. Killen, Belfast. Pneumatic tire. Aug. 7.
 17,176. J. A. Mays, London. Device for the protection of elastic tires. Aug. 7.
 17,187. S. S. Bromhead, London. Leak-stopping hose clip or bandage. Aug. 7.
 17,274. J. H. Patterson, London. Puncture-preventing device for pneumatic tires. Aug. 8.
 17,293. G. Pearson, Nottingham. Surgical syringe. Aug. 10.
 *17,318. S. E. Page, London. Playing ball. (The I. B. Kleinert Rubber Co., New York.) Aug. 10.
 17,461. G. Schumacher, London. Pneumatic tire for vehicles. Aug. 12.
 17,465. H. E. Irwin, Kingston-on-Thames. Pneumatic tire. Aug. 12.
 17,590. H. Hawthorne and the Imperial Tire and Rubber Co., Limited, London. Repair patch for tire covers. Aug. 19.
 17,604. A. Lebert, Düsseldorf, Germany. Pneumatic tire. Aug. 14.
 17,730. C. Lee, Birmingham. Pneumatic tire. Aug. 17.
 17,735. C. W. Formby, Weybridge. Pneumatic tire. Aug. 17.
 17,813. B. G. Mészáros and G. Weber, London. Toy balloon. Aug. 17.
 17,830. P. M. Matthew, Victoria India Rubber Mills, Edinburgh. Heel pad. Aug. 18.
 17,878. C. A. Houfe, London. Resilient wheel. Aug. 18.
 17,887. J. Russell, London. Pneumatic tire for vehicles. Aug. 18.
 17,945. H. J. Dixon and E. B. Brewer, London. Rubber tire. Aug. 19.
 18,009. J. A. Mays, London. Improvements in elastic tires and tire fabrics. Aug. 20.
 18,019. G. Dexter and G. H. Dexter, London. Pneumatic tire for vehicles. Aug. 20.
 *18,024. G. Barker, Birmingham. Improvements relating to pneumatic tires. (Lincoln C. Cummings, United States.) Aug. 20.
 18,028. A. E. Moore and A. Darch, London. Waterproof garment. Aug. 20.
 18,073. W. H. Freeman, London. Hose reel. Aug. 21.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 15, 1903.]

- *6,933 (1902). Pneumatic mechanical toy. G. T. Hyde, London. (E. S. Savage, No. 30 West Eighteenth street, New York.)
 7,061 (1902). Pneumatic tire. Self Sealing Air Chamber Co., Limited, and A. Franklin, Birmingham.
 *7,178 (1902). Vaginal syringe. A. R. Borden, Toledo, Ohio.
 *7,286 (1902). Wheel with protected elastic tire. W. F. Masters, Brooklyn, New York.
 *7,604 (1902). Bicycle pump [formed in part by some number of the bicycle frame]. J. P. Browning, R. H. Reville, and W. F. Paterson, Brantford, Ontario.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 22, 1903.]

- 7,641 (1902). Pneumatic tire. L. A. Squire, Colchester.
 *7,746 (1902). Vehicle tire. C. Stein, Meadville, Pennsylvania. [Being the Stein double cushion tire, manufactured at Akron, Ohio.]
 7,798 (1902). Pneumatic tire. J. Butler, Altrincham; W. Bell, Knutsford; W. A. Jones, and J. Bate, Manchester.
 *7,935 (1902). Playing ball. E. Kempshall, Boston, United States.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 29, 1903.]

- 8,205 (1902). Pneumatic tire [provided with a chrome leather protector between the air tube and cover]. T. Houben, Liège, Belgium.
 8,018 (1902). Hose [comprising layers of rubber and asbestos impregnated with rubber, for railway and other like use]. Alfred Calmon, Hamburg, Germany.
 8,084 (1902). Utilization of India-rubber and Gutta-percha waste [by dissolving in phenol and later distilling the phenol from the mixture]. P. H. J. Chautard and H. Kessler, Paris, France.
 *8,161 (1902). Horseshoe. J. Riley, New York, United States.
 8,262 (1902). Means of closing leaks in hose. H. Fischer, Harburg a/d Elbe, Germany.
 8,224 (1902). Machine for proofing fabrics. J. Ingleby, Headingley, Leeds.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 6, 1903.]

- *8,406 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *8,407 (1902). Playing ball. F. H. Richards, Hartford, Connecticut.
 *8,408 (1902). Playing ball. *Same*.
 *8,409 (1902). Playing ball. E. Kempshall, Boston, Massachusetts.
 *8,410 (1902). Golf ball. F. H. Richards, Hartford, Connecticut.
 8,506 (1902). Cellular rubber tire for vehicles. A. Ducasble, Asnières (Seine) France.
 *8,579 (1902). Fountain pen. F. C. Brown, New York.
 8,612 (1902). Pneumatic tire with non slipping tread. C. H. Wilkinson, Huddersfield.
 8,707 (1902). Pneumatic tire with metal protected tread. C. D. Cassidy, Dublin.
 8,722 (1902). Apparatus for supplying fresh air for respiration. I. Ettrich, Oberaltstadt, Bohemia.
 *8,739 (1902). Method of vulcanizing pneumatic tires [in a machine which can be quickly opened and closed]. A. J. Boulton, London. (A. H. Marks, Akron, Ohio.)
 *8,802 (1902). Golf ball. F. H. Richards, Hartford, Connecticut.
 *8,803 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *8,804 (1902). Golf ball. *Same*.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

- 144,772 (Class 30f). Bed bathtub of waterproof texture or rubber. R. Cramer, Gr. Tabarz. July 29.
 144,981 (Cl. 30d). Plunger for syringes with rubber piston-packing. Frau R. Détert, Berlin. Aug. 26.
 145,019 (Cl. 77a). Implements for room gymnastics with rubber bands or cords. T. Barth, Jülich. Aug. 26.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 203,787 (Class 3d). Tape prepared with rubber to retain the shape of outer garments, sticking to the goods when pressed with hot iron, to avoid sewing. C. Thill, Cologne. July 29.
 203,987 (Cl. 47f). Seamless rubber hose for high pressure, with spiral wire. Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken, Gelnhausen. July 29.
 204,181 (Cl. 47f). Sleeve like rubber ring of conical cross section for the screw ends of hose. Frau F. Reicherl, Giesenhausen. July 29.
 204,594 (Cl. 3d). Elastic cravat fastener for turn-down collars. A. Wagner, Hamburg. Aug. 5.
 204,234 (Cl. 30r). Elastic band with loin bolster to assist mares in foaling. E. Warlitz, Niederwürfschnitz. Aug. 5.
 204,581 (Cl. 70c). Ink well with adjustable rubber funnel for regulating height of ink. E. Klemm, Waldenburg. Aug. 5.
 204,225 (Cl. 30d). Rubber ring for corns. P. Poppelsdorf, Frankfurt a/M. Aug. 12.
 204,970 (Cl. 47f). Hose in the end of which is pressed a soft rubber shell so that a pressure chamber is formed between it and the walls of the hose. Vereinigte-Berlin Frankfurter Gummiwaaren-Fabriken, Gelnhausen. Aug. 12.
 205,265 (Cl. 82d). Rubber packing rings with centering collars for centrifugal pumps. B. A. O. Prollius, Copenhagen. Aug. 19.
 205,862 (Cl. 30r). Seamless rubber cushions. Vereinigte Gummiwaaren-Fabriken-Harburg-Wien, Wimpasing. Aug. 26.
 205,595 (Cl. 77c). Rubber tips for billiard cues. Frau E. Weiss, Neu-Weissensee. Aug. 26.

APPLICATIONS.

- 13,139 (Class 71a). Shoe with elastic tread. H. Dick, Mulhausen. Aug. 5.
 27,928 (Cl. 71a). Elastic protection for shoe heels. T. Hille, Berlin-Schoeneberg. Aug. 12.
 6,746 (Cl. 71a). Combination rubber and leather heel. J. J. Jones, New York. Aug. 26.

THE United States consul at Copenhagen reports to his government [August 11]: "A prominent firm of vehicle manufacturers in Copenhagen wish to correspond with a reliable firm in the United States with a view to purchasing rubber tires for use in the manufacture of vehicles. Very few rubber tire vehicles are in use in Denmark at present, and the demand for this class of goods is not great. There is a growing demand, however, and the trade is likely to develop very satisfactorily. Letters forwarded to this office in reply to the above request will be promptly delivered."

HOW "THE PARA RUBBER PLANTATION CO." WORKS.

THE second semi-annual dividend of 6 per cent. of the Para Rubber Plantation Co., earned on its rubber trading operations in Venezuela, was due on September 20, according to an announcement made by the company on August 11. An unusual feature of the announcement was that the promised dividend was to apply to any treasury stock that might still be sold, prior to September 16, as well as to the shares already disposed of. A company that can earn dividends on unsold shares of stock lying in its treasury must be admitted to have achieved success in financial management in an exceptional degree. In a number of newspapers, early in the past month, an advertisement

NOTICE.

On account of negotiations consummated in Europe for the sale of the entire balance of the Treasury stock of the Para Rubber Plantation Company, it has been decided to withdraw the stock from the market on September 16th, 1903, at 5 P. M.

Intending purchasers should at once indicate size of block desired, as preference will be given to subscriptions in the order of their receipt. Price of shares \$10.00 each, par value.

PARA RUBBER PLANTATION CO.,
52 Broadway, N. Y. City.

ing office—that of the Standard Securities Co.—where he met a gentleman answering to the name of Jack Merrill, whose office is understood to be that of secretary of the Standard Securities Co. Mr. Merrill commended the rubber proposition very highly, and talked frankly and freely in regard to the management of the Para Rubber Plantation Co., giving out some details not hitherto published, and which may be of interest to some of our readers.

NARRATIVE OF MR. JACK MERRILL.

"It is just this way," explained Mr. Merrill; "the Standard Securities Co., which I represent, is purely a selling concern, and has no interest in the Para Rubber Plantation Co. further than in disposing of its stock. The Rubber company was organized last year with \$5,000,000 capital, divided into \$10 shares. Of this stock \$1,000,000 was held in reserve and will not be issued. The incorporators, including Mr. John Cudahy of Chicago and several other well known men, took \$1,250,000 of the stock, leaving \$2,750,000 as treasury stock to be placed with the public. The company placed a portion of this stock, and last spring the Standard Securities Co. took an option on all the remaining treasury stock of the Rubber company. We did not buy the stock, and we do not own a share of it now, but we took an option on placing it. We have sold a considerable amount and will continue to sell until September 16, when we surrender our option and go out of the business."

"What happens then?"

"Mr. F. M. Crawford, of the Para Rubber Plantation Co., who has just returned from Europe, has made a deal with certain rubber men of Antwerp and Paris, who agree to take all the stock that may be left in the treasury on that date. They agree to develop and gather the rubber on our holdings on the Casiquiare river, and to pay a royalty on the rubber gathered. A representative of the European syndicate has sailed from Antwerp, to conclude the transaction, and is due in New York next Friday [September 11]. After September 16, there will be no stock for sale to the American public."

"Will you tell me something of the history and holdings of the Para Rubber Plantation Co.?"

"After Dr. Lucien Morisse made his report to the French government* on the vast possibilities and enormous profits in the rubber gathering industry, a number of capitalists in this country were interested and this syndicate was formed. The Para company was organized and at once set about securing the valuable territory on which Dr. Morisse reported. The result was that the company purchased all the land bordering on the Casiquiare, between the Negro and the Orinoco rivers—a distance of 175 miles. A strip three miles wide on one side of the river and five miles on the other was purchased—in round numbers 1,000,000 acres. On this property various reports were made as to the number of bearing rubber trees, some estimating as many as 20 to the acre. We feel that we are very conservative when we estimate that the property will average 6 trees to the acre, or 6,000,000 trees all told. The idea is to establish trading stations or posts all along the river, and to send the natives out from these points to gather rubber. In fact, a portion of this work was already accomplished when we took hold. An Italian syndicate, the head of which has since died in New York, had been gathering rubber in this territory and had a number of posts in operation. The first thing the Para Rubber Plantation Co. did was to buy this entire outfit, thus providing itself with a number of well equipped stations. The company is now gathering rubber there and as rapidly as posts can be developed and forces organized the output will be increased. The gathering is done by the native Indians and half breeds, somewhat on the grub stake principle of the miners, the company providing the sustenance for the workers when they go into the woods and taking their rubber in payment when they come out."

"How much rubber has been actually gathered so far?"

"The company's output this year has been 300,000 pounds. That rubber is all ready to come out now—in fact, should have gone down the river before this time. This we feel is but a drop in the bucket, for a full grown rubber tree should yield 5 pounds per year, and, as I told you, we have at least 6,000,000 trees on our original purchase, and as we have just purchased 1,250,000 acres more on the Orinoco, adjoining the property on the Casiquiare, we will more than double our holdings. This new purchase is as rich in rubber forests as our present property, and will yield untold wealth when developed."

"What about the stock as an investment?"

"It seems to me, and I am in the stock selling business, not in the rubber business, that nothing offers more promise. The

*An official copy of Dr. Morisse's report, in THE INDIA RUBBER WORLD office, was printed in Paris in 1891. It relates to observations made by him in 1888-89. The Para company was not incorporated until August, 1902.—THE EDITOR.

riches of this property are something immense. The company was organized by level headed men of means and its stock is fully paid and now assessable. It paid last March its first semi-annual dividend of 6 per cent."

"How did it pay it a dividend if it has never yet gathered and sold any rubber?"

"It paid it out of the profits that accrued on the rubber it took over with the holdings of the Italian syndicate. A considerable amount was then secured and on this the profit was made. It has now declared its second 6 per cent. dividend, which will be paid on September 20, to stockholders of record on September 16. The money for this dividend was advanced by three of the directors, one of them being Mr. Cudahy, and came about in this way. We have the 300,000 pounds of rubber ready for sale, but we failed to get it down the river in time. At a meeting of the directors in Chicago four weeks ago the question of passing our dividend until our product got out was discussed. Mr. Cudahy was very emphatic in his opposition to such a course, saying that many of his employes and friends had invested on the belief that they would receive a dividend this fall, and they ought to get it. He then proposed with two other directors to advance the necessary cash, taking the rubber of the company on consignment as payment for the loan. The checks for the second dividend will therefore be sent out on the date mentioned."

"If an investor buys stock now will he receive his dividend at once?"

"Certainly; any purchaser before September 16, will participate in the dividend. A man who buys on the 15th and has the stock transferred that day will receive a check for his dividend on the 20th."

"Do you mean that Mr. Cudahy and the other two directors advanced \$240,000 on 300,000 pounds of rubber, or enough to pay a 6 per cent. dividend on the \$4,000,000 worth of stock upon which the company operates?"

"Oh no! The dividends are only paid on the stock held by the public, something like \$700,000 worth. The \$2,000,000 of treasury stock draws no dividends of course, and the organizers, who hold \$1,250,000 worth of stock received no dividends in March nor will they be paid dividends now. The dividend paid in March amounted to only about \$12,000, the public holdings of stock not then being large."

THE SILENCE OF MR. JOHN CUDAHY.

ON September 12 THE INDIA RUBBER WORLD addressed a letter to Mr. John Cudahy, in Chicago, advertised as the presi-

dent of the Para Rubber Plantation Co., advising him of the statements made at the New York office of his company, and asking for their confirmation. No reply being received, our Chicago correspondent was asked to interview Mr. Cudahy, and on September 23 a telegram was received from Chicago stating: "Cudahy left to-day for New York on Para matter. Refused to talk. May when returns." Mr. Cudahy's presence in New York on September 25 was ascertained, when an attempt was made to see him. The only result was an interview with Mr. Cudahy's counsel, Mr. Samuel N. Gardenhire—in which it was explicitly denied that Mr. Cudahy had advanced any funds for dividends—and the following letter:

LAW OFFICES OF
GARDENHIRE & JETMORE.

Samuel M. Gardenhire.
Aaron R. Jetmore.

Atlantic Building,
49 Wall Street.
NEW YORK, September 29, 1903.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

American Tract Society Building, New York City.

Dear Sir: With reference to the article which appeared in your September issue relating to the Para Rubber Plantation Company, and the conference had with your Mr. Hill by our Mr. Gardenhire, we have to say as follows:

We must reiterate the statement that the article is misleading in its essential details and in consequence, calculated to do the company great damage. Any further publication by you along similar lines must necessarily tend to enhance this injury. We feel that it is due to you to say that the standing of Mr. Cudahy, its President, is such that it should be a personal guaranty to every stockholder of this Company, as well as to yourself, that it will carry out every obligation that it has made, or shall make. It is in possession of a large and valuable tract of rubber land comprising about one million acres, and has made arrangements to purchase an additional tract of one million, two hundred and fifty thousand acres more. It has three agents, two upon the property and one at Caracas, prosecuting the work of the Company, owes no debts, is preparing to broaden its character and enlarge its facilities for useful labor.

It has withdrawn its stock from the market because of negotiations with foreign capitalists who have become interested in the enterprise, and Mr. Cudahy has assured them and us that he will give the management of this company his personal attention. This assures it the direct benefit of his wide experience and great executive ability. He has instructed us to take such necessary legal steps as are necessary, looking to the accomplishment of this result and we trust you will see your way clear to refrain from any further comments that can do no one any good and our clients an incalculable business injury. Very truly yours,

GARDENHIRE & JETMORE.

THE INACCESSIBLE CASIQUIARE.

By Lyonel Garnier (Mandós.)

THE Casiquiare is a narrow (for South America), swift flowing, and little known river which, rising near Mount Lesseppe, receives from the north the Cunuahú, an affluent of the Orinoco, and joins the rio Negro a little above the Venezuelan town of San Carlos. The Cunuahú rises somewhere in the *Sierra de San Carlos* and divides, one

branch flowing into the Casiquiare and the other into the Orinoco. Thanks to this, the Casiquiare serves as a natural canal, joining the two great rivers, Orinoco and Negro.

Only one fall and three rapids exist on the Casiquiare; the fall, a few hours' journey above the confluence with the rio Negro, and the rapids all three close to the mouth of the Cunuahú. The falls are passable at high water, and have been traversed by a steam launch the *Leas*, belonging to an Italo-Venezuelan expedition which ascended this river and the Orinoco as far as San Fernando de Atabapa.

The great difficulty which any one attempting to do business on the Casiquiare would encounter is the navigation of the rio Negro, only feasible with stern wheelers or other very light draft boats as far as Trinidad, and from thence only to be done in native craft, paddled and carried or poled up the fifteen or

NOTE.—Our correspondent's reference to the means whereby the Casiquiare connects the Orinoco and Negro rivers involves the mention of a river (the Cunuahú) not shown on any map in THE INDIA RUBBER WORLD office. But the whole region of the upper Orinoco has been imperfectly mapped as yet. The specially made map shown in connection with this article is based upon several accepted authorities, but is not offered as an absolutely correct delineation of the course of the Casiquiare. What is very much more to the point is whether the Casiquiare region can be reached readily from the outside—in the manner, for instance, claimed by the Para Rubber Plantation Co.—and in regard to this all authorities are agreed that the rivers leading to that region are not now commercially navigable.—THE EDITOR.

sixteen rapids which divide the place from Cucuhy. From Cucuhy the river is navigable in launches as far as the mouth of the Casiquiare in all seasons. The Casiquiare could be navigated with very powerful light draft steamers at high water—March to June—and during the rest of the year in canoes.

Little is known of the natural products of the Casiquiare, but it may safely be asserted that up to the present not a single kilogram of rubber—fine, scrap, or slab—has been shipped from this river. The late Chevalier Teresio Piasco, chief of the Italo-Venezuelan expedition to the upper Orinoco, informed the writer that Caucho and Balata were abundant; he was silent, however, as to the presence of *Hevea* rubber, although, as it is found at the mouths of the river, both on the Orinoco and the Negro, it is probable that a careful search would reveal its presence on the banks of the numerous affluents of this river.

The climate is said to be healthful. Don André Level Gutierrez, actual governor of the province, has for some years sent men to this river in search of piassava, and has never encountered a mortality above the average. The temperature varies little, 35° to 36° Centigrade being the average; no data is at hand as to rainfall, but thunderstorms are said to be frequent. Like all other parts of this region, the valley of the Casiquiare is uninhabited. Nomadic Indians of the Vare tribe visit it occasionally on hunting expeditions, but that is all. Fish should be abundant, but fresh water turtle are absent.

The Venezuelan government are known to have given various grants of land on the upper Orinoco, and to have offered special inducements to settlers, but hitherto without avail, owing to the enormous difficulties of transport. The only way to work the Casiquiare satisfactorily would be by the construction of three roads—one from Trinidad to Camanáos, in Brazil; one round the falls at the mouth of the Casiquiare; and another further upstream to avoid the rapids. The first would be about 80 miles long over rocky and very uneven ground, the forest being chiefly small trees and beechwood, about five bridges would be required. As to the others nothing certain can be said, owing to lack of information, but the first would be about one mile and the second about 10 miles long.

In parenthesis it may be mentioned that up to May, 1903, when the last news was received from San Carlos, nothing was known there officially as to any grant of lands on the Casiquiare, the writer's informant being the governor himself. The Venezuelan provinces of Alto Orinoco and Amazonas do all their business with Manáos, the falls and rapids of the Orinoco being even worse than those of the rio Negro. They come down from July to November in big canoes and return in steamers to Trinidad, where they reëmbark in their canoes.

From four to five months are spent in the round trip. Whether the falls are passable or not at other seasons of the year is hard to say, but the Venezuelans, and those Brazilians who live on the upper Negro, never do pass them at other times.

During the past year Venezuela exported via Manáos:

Rubber, fine.....	48,354 kilograms
Rubber, scrap.....	20,240 "
Piassava.....	25,211 "

Nearly the whole of the above is shipped to New York. It will be seen, therefore, that the trade of this region is very small, the rubber output being less than that of many *seringales* on the Acre or upper Juruá.

Seeing that foreigners located in the best parts of the Amazon valley have hitherto failed to succeed, it is to be feared that on the Casiquiare they would inevitably meet the same fate. The difficulty in obtaining men to work there, the enormous

expense of transport, and the unsettled condition of the country (the Venezuelan province of Amazonas is notorious as a hot bed of pronunciamientos and revolutions, three governors having been disposed by force of arms in as many years) would form insuperable objections to such an enterprise.

If the manager be a foreigner he will ignore the most essential details of the rubber business. If he has the necessary experience, he can get a better berth on the lower Amazon, or find houses willing to set him up for himself. Should he be a Venezuelan he will meddle with politics, with disastrous results for the company. Brazilians won't go; there are plenty of good rubber lands awaiting exploration here yet, and they naturally prefer to stay at home.

The greatest difficulty after transport would be the *personnel*. The days when one could get hundreds of Cearenses for the asking are gone. Not only

does Ceará impose a heavy tax on every person leaving that state, but the men themselves have had their eyes opened and know that rubber collecting is one of the most sickly trades in existence, and about the worst paid. It requires a certain skill, too, not to be found in every raw hand as many owners of land on the Purús and Juruá know to their cost.

In Peru the supply of rubber workers is inadequate to the demand. Venezuela, as mentioned, is even worse off in this respect, and Europeans cannot stand the climate. West Indian blacks are no good; they have been tried here and found wanting. Chinese might serve, but there is a very considerable prejudice against them which may any day culminate in a law expelling them. In short, as long as there is rubber here, below the falls, it is utter folly to go for it to places like the Casiquiare, where the product hardly compensates the expense of the transportation.

Manáos, Brazil, August 20, 1903.

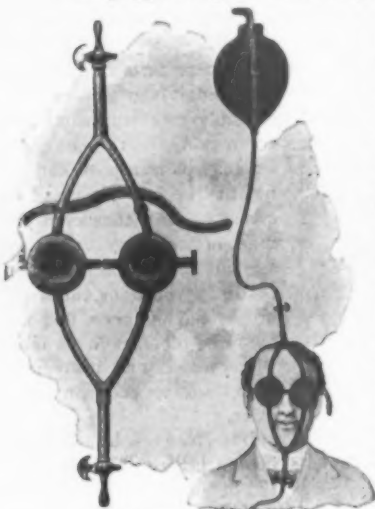


THE CASIQUIARE AND ITS OUTLETS.

NEW GOODS AND SPECIALTIES IN RUBBER.

NEW TYPES OF ICE AND WATER BAGS.

THE water bag and the ice bag made of rubber for local applications have been in use for many years and almost any civilized being the world over recognizes the ordinary type at sight. Some very valuable and ingenious



GOODRICH EYE PAD.

applications of the principle have however lately appeared. For example, the Goodrich Eye Pad, which is illustrated herewith, is new, ingenious, simple, and easily understood. It is designed for the continuous flow of either hot or iced water, through a pair of thin rubber rings which lie against the eye-lids, conforming to the shape of the ball and yet without pressure. The flow of the water can easily be regulated so that it be a continu-

ous stream or simply a drop at a time. The application can

be made to one eye or to both. These goods are made of a very high grade of stock, with a soft finish, and show throughout the best workmanship.—

Along the same line of invention is the Goodrich Mastoid Ice Bag and the continuous flow hot or cold water mastoid bag. The former of the two is a fine Pará rubber bag, very



GOODRICH MASTOID ICE BAG.



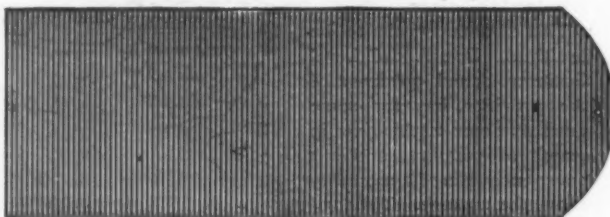
GOODRICH FUNNEL DRAIN.

light and easily secured in its place, covering the mastoid process only, but fully. For the same purpose is the continuous flow Mastoid Bag, which is arranged so that the upper tube may be readily attached to a fountain bag or reservoir and a continuous flow of iced or hot water passed over the mastoid process.—Another Goodrich appliance that is exceptionally useful for carrying off aural discharges or fluids used in irrigating is the Goodrich Funnel Drain. This can be readily adjusted under the ear as shown in the illustration, but is equally applicable for treatment of the mouth or nose. These goods

belong to a varied and very complete line produced in the special surgical department of The B. F. Goodrich Co., Akron, Ohio.

THE PERFECTION BATH TUB MAT.

THE ordinary porcelain bath tub is a very necessary but a somewhat treacherous article of household economy. Owing to its high polish it is slippery, and many a fall has resulted from an incautious movement when getting in and out. The rubber mat shown in an accompanying illustration obviates every bit of this trouble. It fits snugly in the bottom of the



tub, to which it adheres firmly. The stock of which the mat is made is an excellent white compound, as soft as velvet, its surface being slightly corrugated. After use it is easily rinsed off and dries in a very few minutes. It is made in two sizes—12 X 30 and 12 X 26 inches. [Perfection Rubber Co.—John J. Cook, No. 923 South Clinton avenue, Trenton, New Jersey.]

PNEUMATIC PEW CUSHIONS.

IOWA newspapers chronicle the invention, by one Hans Neimend, of Ida Grove, of a device whereby occupants of church pews, by dropping a nickel in the slot, can be automatically provided with a pneumatic cushion made of India-rubber. Just what denomination will be first to adopt this improvement, it is hard to say; but those who go to church to rest will at once hail Mr. Neimend as a sane, practical benefactor of the human race.

THE "FAULTLESS" ONE-PIECE SYRINGE.

A MOST beautiful piece of rubber work is the "Faultless" one-piece bulb syringe. The surface of both tube and bulb is actually as smooth as glass, and of a dark crimson color, with a very curious and attractive mottling. The goods are steam cured and are certainly fully as beautiful and more novel in finish as any foreign or domestic products in the same line that have yet appeared. [The Faultless Rubber Co., Akron, Ohio.]

THE GRAY RUBBER GLOVE.

WHEN the rubber glove first saw the light it was black, heavy, cumbrous, and fitted with seams, stays, and patches. Later came the tan glove, much lighter and a pretty piece of work. Then in the process of evolution came the "dipped" glove, seamless, the color of pure rubber, and a genuinely artistic bit of workmanship. The use of these gloves by surgeons was wonderfully increased by the thin dipped glove that preserved the sense of touch so perfectly while affording perfect protection to both patient and operator. A curious phase of the rubber glove habit is that surgeons soon get accustomed to their use and call for heavier gloves. To cater to this demand a new seamless gray glove is now on the market, that has found a warm welcome and is meeting with a gratifying sale. [The Miller Rubber Manufacturing Co., Akron, Ohio.]

RUBBER FACTORY APPLIANCES.

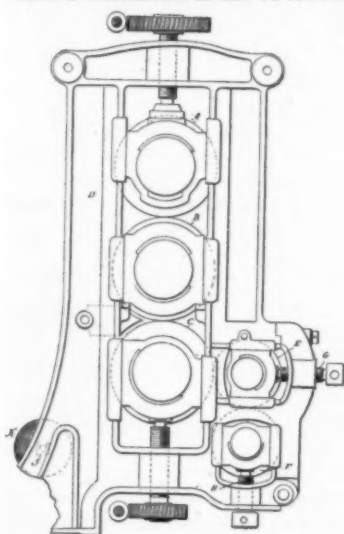
THE PIERCE UPPER CALENDER.

THE superintendent of the rubber factory of L. Candee & Co. (New Haven, Conn.), Mr. John H. Pearce, is already well known to the rubber manufacturers of the world through his inventions, particularly in the line of calenders for shoe work. His latest production, a five roll machine, designed to save waste in sheet goods, that are, after coating, cut into shapes that do not utilize all of the surface spread, is shown in the accompanying outline drawings. In this instance the calender is adapted to the production of shoe uppers. The plan

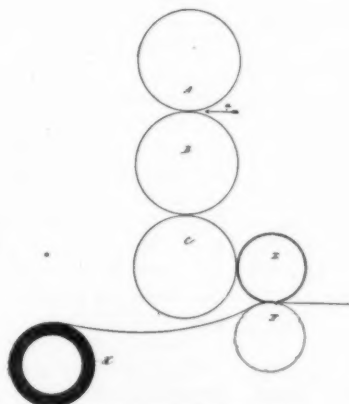
pursued is to spread the plain sheet to the thickness desired, and then run it through two supplementary rolls, together with the fabric. These rolls are fitted with male and female dies, which set the sheet of rubber upon the fabric in certain patterns only. The waste rubber between the dies either follows the roll, or if it adheres to the fabric is easily stripped off. The process should result in quite a saving and would appear to be perfectly practical. Mr. Pearce has taken out a United States patent on the calender (No. 720,281) and assigned it to Henry Stuart Hotchkiss, of New Haven.

THE PROBERT "SPIDER PRESS."

FOR ordinary everyday mold work in a small factory the "Spider Press" is about as useful a mechanism as can be found. The illustration is taken from a photograph of one 20x20 inches in size. It is light-weighting but



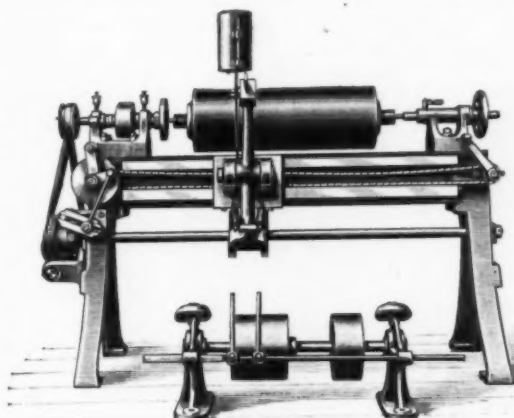
SIDE VIEW.

ARRANGEMENT OF THE ROLLS.
THE PIERCE UPPER CALENDER.

1480 pounds—and strong, the tie rods being of hammered steel, and as rapid as is consistent with the power, the pitch of the steel screw being two threads to the inch. The lower end of the screw is fitted with an anti-friction stop in the oil well in the top of the upper platen. [Excelsior Machine Works, Akron, Ohio.]

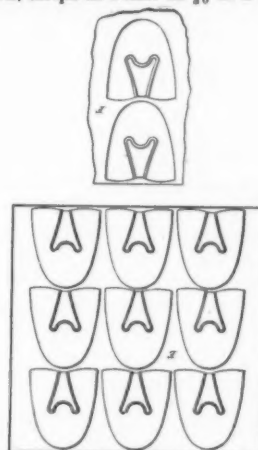
AUTOMATIC CUTTER FOR INSULATING TAPE.

A MACHINE for cutting tape—either pure, gummed, cloth surfaced, or non-gummed cloth—which operates automatically, is shown in the accompanying illustration. As is usual, the material to be cut is first wound tightly on a gummed wooden or steel mandrel, and may be put into the roll 1 meter [=39.37



CUTTER FOR INSULATING TAPE.

inches] in length to about 200 millimeters [=about 7.9 inches] in width. The extreme ends of the roll are gummed, so that it is impossible for the roll to unwind during the cutting. The roll after being placed in the machine comes in contact with a knife to which is attached a lever, the roll turning to the left hand—that is, in the opposite direction to that of the usual lathes. In action the lever and the knife moves forward by means of an eccentric and is released and set back by means of a spring. The feed is accomplished through an accurately spaced link chain which can be regulated to $\frac{1}{16}$ of a millimeter [1 millimeter=.0394 inch]. The machine is capable of a great range of work, strips as small as $\frac{5}{16}$ of a millimeter being accurately cut. When the knife has made the last cut on the roll the machine automatically disconnects itself leaving the rolls of tape ready for removal and wrapping. By means of this machine, one workman can attend to five or six of them at the same time, which insures a large product. [Max Müller, Hannover-Hainholz, Germany.]

PLAN VIEW
OF SURFACE OF PATTERN ROLL.

THE OBITUARY RECORD.

CHRISTOPHER ROBERTS.

CHRISTOPHER ROBERTS, president of the C. Roberts Rubber Co., of Newark, New Jersey, died at his home in that city on September 20, in his seventy-seventh year. Mr. Roberts was born in 1827 in Manchester, England, where, after remaining in school as long as his parents, who were in moderate circumstances, could afford, he found employment in an India-rubber factory. He speedily became an efficient workman, particularly in the making of stationers' rubber goods. In 1849 he came to the United States to install some machinery for a relative who was interested in the rubber industry, and,



after looking the field over, he decided to remain here and invest the small capital he had saved in a factory of his own. Beginning in a small way at Providence, he succeeded, and about 1858 he removed his business to Newark, shortly afterward making a contract with a large pencil manufacturer for rubber tips, which arrangement was the beginning of what

developed into an important business. The pencil manufacturer was Eberhard Faber (New York), who became a partner in the business, conducted for a number of years as Christopher Roberts & Co.

Early in 1899 the company became a corporation under the laws of New Jersey, with Mr. Roberts president and Mr. Faber vice president. The capital stock was \$150,000, the majority being held by Mr. Roberts. The factory employed about 100 people, and was in constant operation, making only erasers and elastic bands, the total output being taken by the firm of Faber.

For two years past Mr. Roberts was prevented by failing health from giving active attention to business. Mr. Roberts at no time had any labor trouble in his factory, and there are men who have worked in the factory since they were boys. Mr. Roberts was unostentatious in his life, and is known to have disbursed in a quiet way a great deal of money in charity, as also did Mrs. Roberts, who died fifteen years ago. The only surviving member of the family is a daughter, Mrs. George S. Coxe, whose husband is connected with the factory. The two sons both died several years ago. Mr. Roberts was a member of the Newark Board of Trade, and until three years ago was a director in the Essex County Bank. He was a regular attendant at Trinity Church (Episcopal). Aside from his interest in the rubber works, Mr. Roberts is understood to have left considerable estate. It is stated that there will be no change in the method of carrying on the business of the Roberts company.

MARTIN V. BEIGER, president of the Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana) died at South Bend, on September 26, following an operation for appendicitis on September 21. Mr. Beiger was about 58 years of age. He

served in the civil war in the One Hundred and Thirty-eighth Indiana regiment. At the time of his death he was president of the board of trustees of De Pauw University and a trustee of the Chautauqua Assembly, Chautauqua, New York. Mr. Beiger established, about fourteen years ago, in connection with capitalists of South Bend and Mishawaka, a woolen manufacturing business, an important product of which was supplies for "combination boots." The company next began buying rubber overs, in order to sell the boots complete. In November, 1896, THE INDIA RUBBER WORLD stated: "The Mishawaka Woolen Manufacturing Co., it is estimated, will use 75 carloads of rubber overs this season, in combination with their knit boots and lumbermen's socks." Two years later a rubber department was added, and placed in charge of Emmett A. Saunders, who had been general superintendent of factories of the United States Rubber Co., the capital of the company being increased for this purpose from \$500,000 to \$700,000. The company's sales in 1889 were \$65,000; in 1902 they amounted to \$4,048,000.

JOHN FREDERICK SEIBERLING died on September 6, at his home in Akron, Ohio, in his seventieth year. He was a native of Ohio, belonging to an extensive family whose history in that state runs back to 1828. Mr. Seiberling was born on a farm, where the work of harvesting suggested labor saving ideas which he applied to mowing and reaping machines, in the manufacture of which he acquired a fortune. The factory of the J. F. Seiberling Co. became one of Akron's largest and most profitable industries. He became active in many other business enterprises, and was the founder of The India Rubber Co., of Akron, in 1896, employing a factory he had used formerly for making reapers. Mr. Seiberling was the father of Frank A. Seiberling, general manager of the Goodyear Tire and Rubber Co. (Akron); Charles W. Seiberling, secretary of the same company; and Mrs. S. S. Miller, whose husband is connected with the Buckeye Rubber Co. (Akron). Two brothers of the deceased, James H. Seiberling and Monroe Seiberling, are interested in the Indiana Insulated Wire and Rubber Co. (Jonesboro, Indiana), the former being president. The Seiberling interests also controlled the late Peoria Rubber and Manufacturing Co. (Peoria, Illinois), the factory of which was closed on being acquired by a combination. Mr. Seiberling was one of the most philanthropic and liberal men of Akron, where his loss is keenly felt. The funeral services, held at his late residence on September 8, were attended by a large number of Akron's most influential citizens.

CHARLES E. BREEDEN, of Glenridge, New Jersey, and a retired business man of New York, died on August 29 at his summer home in Laconia, New Hampshire. He was born in Boston, June 10, 1842, being the son of Abner Breeden, the first selling agent employed by the Ford Rubber Co., who began the manufacture of rubber shoes at New Brunswick, N. J., in 1845. Charles entered the selling agency after it became Breeden & Southwick (New York), handling the product of the leading rubber shoe manufacturers. He later volunteered in the civil war, after which he returned to his old firm, from which he retired in 1871, possessed of a comfortable fortune. His uncle, Benjamin F. Breeden, also of Breeden & Southwick, was one of the founders of the North British Rubber Co., Limited.

THE attorney general of New Jersey has decided that rubber stamps cannot be used in marking ballots to be used in voting in that state this year, for or against the proposed amendments to the state constitution.

NEWS OF THE AMERICAN RUBBER TRADE.

ADVANCE IN RUBBER TIRE PRICES.

SEVERAL leading rubber tire manufacturers have withdrawn all prices, in consequence of the increasing cost of raw materials, in harmony with an agreement reached at the recent meeting in New York city, at which nine factories are understood to have been represented. The subject is treated at further length in the Akron correspondence which appears in this issue.

RUBBER GOODS MANUFACTURING CO.

THE equipment of the factory of The India Rubber Co., at New Brunswick, New Jersey, has progressed steadily since our last report, and it is now practically ready for operation. The product of the company will consist largely of tires, as was true of the factory operated under the same name at Akron, Ohio, burned last March, and orders are now being taken. The organization of the company has been completed by the election of J. C. Wilson, president; Charles A. Hunter, vice president; and W. L. Wild, secretary and treasurer. Mr. Wilson for some time past has been manager of the rubber tire factories of the Rubber Goods Manufacturing Co. under the presidency of Lewis D. Parker. Mr. Hunter, of the Peerless company, is vice president of a number of the companies in the combination. Mr. Wild was secretary of The India Rubber Co. at Akron.

In addition to the other offices held by him, Mr. Hunter has been chosen vice president of the Mechanical Rubber Co. and the New York Belting and Packing Co., Limited, instead of Talbot J. Taylor. Also, as vice president of the Hartford Rubber Works Co., instead of F. H. Turner, who, for some time past, had held the two positions of vice president and treasurer.

At the annual election of Morgan & Wright, Incorporated (Chicago), in October, it is understood that Charles J. Butler will be chosen president.

BOSTON WOVEN HOSE AND RUBBER CO.

EIGHTEEN electric motors are being installed at the factory, having an aggregate of 615 HP. These will be placed in the most favorable positions and connected direct with the various lines of shafting. During the month the company's headquarters, at Cambridge, have been visited by Mr. J. V. Selby, manager of their Pacific coast branch (San Francisco), and Mr. W. O. Franklin, who covers the southern part of that territory and Mexico.

THE NEW CABLE TO ALASKA.

A SUBMARINE cable is about to be laid between the United States (at Seattle, Washington state) to Sitka, Alaska. There will be a branch from the station at Baronoff to Juneau, Alaska, to connect with the line laid a few years ago between Juneau and Skagway. The cable will be laid by the government, through the agency of the Signal Service. From that office the information is gained that the length of cable ordered is as follows:

Shore end.....	10 miles.
Intermediate.....	409 "
Deep sea.....	940 "
Total.....	1359 "

In the manufacture of the cable a few feet more than the mileage here shown has been supplied of each type, but for convenience sake the fraction is not shown. This will be the

longest cable yet manufactured in America. It has been turned out, at the rate of 20 miles a day, by The Safety Insulated Wire and Rubber Co. (New York). The insulation is of Pará rubber, applied by the seamless process of the company referred to. It is expected that cable communication with Seattle will be established by the end of November.

CONVERSE MEMORIAL DAY.

On Friday, September 4, occurred the sixtieth anniversary of the marriage of Elisha Slade Converse and Mary Diana Edmunds, who, since 1850, have made their home at Malden, Massachusetts. In 1853 Mr. Converse became treasurer of the Boston Rubber Shoe Co., in 1856 president of the Malden Bank, and in 1882, the first mayor of Malden. During this long period the family has been identified in very many ways with the business and social life of Malden, and the celebration of the golden wedding of Mr. and Mrs. Converse, ten years ago, was participated in by so many persons as to make it a notable event in the history of the city. This year, instead of another extensive celebration, the family decided to defray the expenses of the excursion on September 4 of the Boston Floating Hospital—an important and long established charity. The date mentioned was, therefore, designated as "Converse Memorial Day." The management of the hospital sent Mrs. Converse sixty beautiful white asters, in remembrance of the anniversary. —A recent day on the hospital program was known as "Marion Day," on account of the expenses of the excursion on that date being provided by an entertainment given at "The Moorings," the Summer residence, at Marion, Massachusetts, of Colonel Harry E. Converse.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 22	2,300	13	11	1,270	40	39
Week ending Aug. 29	940	13½	12½	145	42	42
Week ending Sept. 4	2,510	13½	12½	570	43	42½
Week ending Sept. 12	520	12½	12½	510	42½	42½
Week ending Sept. 19	1,100	12½	11	400	42½	40
Week ending Sept. 26	320	10½	10	400	37½	35

RANGE FOR TWO YEARS.

Common.			Preferred.	
1902.....	High 19½	Low 14	High 64	Low 49½
1903.....	19½	7	58	30½

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 22	3,400	15½	14	300	70	69½
Week ending Aug. 29	5,881	19	14½	710	75	70
Week ending Sept. 4	4,891	19½	18½	100	76	76
Week ending Sept. 12	2,010	19½	18½	—	—	—
Week ending Sept. 19	3,050	18½	15½	810	72	70
Week ending Sept. 26	1,400	16	15	720	70	69½

RANGE FOR TWO YEARS.

Common.			Preferred.	
1902.....	High 25½	Low 17½	High 74	Low 63
1903.....	30	12	84½	60

CONCORD RUBBER FACTORY FOR SALE.

THE plant occupied for several years past by the Concord Rubber Co., at Concord Junction, Massachusetts, and up to May 1 last, when the company ceased operations, is now adver-

tised for sale. The plant is in condition for carrying on the manufacture of rubber goods, or may be readily adapted for other purposes. Further details are contained in the advertising pages of this Journal.

ANOTHER SINGER FACTORY IN EUROPE.

THE Singer Manufacturing Co. will establish a sewing machine factory in Germany, at Wittenberge, midway between Hamburg and Berlin. This will be the Singer company's fourth factory in Europe, the others being located (1) at Kilborne, near Glasgow, Scotland; (2) at Floridsdorf, near Vienna; and (3) at Poldosk, between St. Petersburg and Moscow, in Russia.

NEW INCORPORATIONS.

THE Buffalo Rubber Manufacturing Co., July 17, under New York laws; capital, \$50,000, fully subscribed. E. L. Toy, formerly vice president of the Alden Rubber Co., is president, and A. J. Commins, former secretary of the Alden company, is secretary and treasurer. A desirable manufacturing plant has been acquired at Tonawanda and West avenues, Buffalo, New York. The same has been electrically equipped, and at last accounts the company hoped to have an attractive line of rubber specialties on the market by October 1.

—The Housatonic Rubber Co. (Bridgeport, Conn.), September 22, 1903; capital, \$4000, in \$50-shares. Directors: Justin A. Wilson (president), Phebe A. Wilson (secretary and treasurer), A. B. Beers. The corporation is formed to continue the rubber reclaiming business conducted by the late James A. Wilson as the Housatonic Rubber Co.

—Anchor Rubber Tire and Manufacturing Co., September 5, 1903, under New York laws; capital, \$125,000. Incorporators: A. C. Farnsworth and A. J. Farnsworth, New York city; Edward Ridgway and Joseph W. Elbersen, Setauket, Long Island. The purpose of the company is to make solid rubber vehicle tires and insulated wire, at a Setauket factory with which Mr. Elbersen has long been identified. Mr. Elbersen will be general manager, and it is proposed to begin work early in this month.

—Harris Rubber Co., September 1, 1903, under New York laws, to manufacture rubber goods; capital, \$15,000. Incorporators: Benjamin Harris and Minnie Harris, No. 209 Sixth street, Hoboken, New Jersey; Max Cohen, New York city.

—The incorporation of the American Rubber Co., under New Jersey laws, with \$100,000 capital, was reported in THE INDIA RUBBER WORLD June 1, 1903 [page 320]. On June 29 the company filed a certificate at Trenton, changing its name to the Continental Rubber Co., and increasing the capital to \$1,000,000. One of the incorporators, Samuel R. Betts, of a legal firm at No. 120 Broadway, New York, informs THE INDIA RUBBER WORLD that the company are not yet prepared to make public any statement regarding their object or plans.

TRADE NEWS NOTES.

THE Fairfield (Connecticut) Rubber Co. have awarded a contract for the erection of an additional storage warehouse, to be of brick, 40 x 120 feet, with fireproof roofing.

—Four large new boilers have been installed in the power plant of the Fells factory of the Boston Rubber Shoe Co.

—The Alling Rubber Co. have enlarged their store at Bridgeport, Connecticut, by annexing an adjoining store, so that they now occupy Nos. 1125 to 1129 Main street. The store is divided into sections for different lines of goods, the bicycle tire department being spoken of as unusually extensive and complete. Ernest M. Jaycox is resident manager.

—The engine at the new rubber shoe factory of Terrence McCarty, at Bristol, Rhode Island, have been running for several days, and at last accounts it was expected that manufacturing would be begun shortly after the first of the month.

—The Yatman Rubber Co. (Newark, New Jersey), whose loss by fire was mentioned lately in these columns, inform THE INDIA RUBBER WORLD that they have succeeded in getting their insurance adjusted and have resumed manufacturing at the same premises, Nos. 224-228 High street.

—The Fawkes Rubber Co. (Denver, Colorado) have opened a branch office at No. 1679 Broadway, New York, for the sale of their new vehicle and bicycle tire, which was described in THE INDIA RUBBER WORLD for July 1, 1903. The office will be in charge of Basil S. Courtney, as manager of sales for the company—a gentleman of several years experience in the tire selling trade, he having been until recently with the New York Belting and Packing Co., Limited.

—The twenty-nine salesmen of the Chicago Rubber Shoe Co., on August 29, the last day of their summer vacation, were delightfully entertained at the summer home of the president of the company, Mr. E. G. Stearns, at Lake Geneva, a few hours out of Chicago. Seven states are covered by the firm's traveling staff.

—Theodore Hofeller & Co. (Buffalo, New York) are distributing to the trade a neat folder illustrating the expansion of their trade in old rubber, in which line they now claim the largest business in the world. A view is given of their present large premises, in comparison with their original plant, in 1881. The title of this folder is characteristic of the spirit which pervades the business of the establishment: "Expansion Thro' Mutual Good Will."

—The factory of the Goodyear's Metallic Rubber Shoe Co. [Wales-Goodyear], at Naugatuck, was closed for a few days early in the month on account of an accident to the engine.

—Henry L. Hotchkiss, of L. Candee & Co. (New Haven, Conn.), has been elected president of the Glenark Knitting Co., of Woonsocket, R. I. The board of directors includes also Colonel Harry E. Converse, of the Boston Rubber Shoe Co., and John J. Banigan, formerly of the rubber trade.

—In the Labor Day parade in Boston a feature was a float showing a bevy of pretty girls, employes of the Hood Rubber Co., displaying a banner inscribed "Patronize Union Labor." There were in the parade 150 men belonging to the Rubber Workers' Union, and 150 female employes.

—The firm of Gibson-King Rubber Co. (No. 206 Broadway, New York), the formation of which was mentioned in THE INDIA RUBBER WORLD of August 1, was dissolved on September 14 by mutual consent. A. Rasines, of the same address, has been appointed trustee in liquidation.

—The blowing out of a boiler tube at the factory of the Joseph Banigan Rubber Co., scattered coals from the grate around the boiler room, setting fire to the woodwork. An alarm was sounded and the Providence fire department put out the flames before much damage was done.

—The strike in the rubber shoe factory of L. Candee & Co. (New Haven, Connecticut), mentioned in our last issue, came to an end about the middle of the month. It resulted from the introduction of a new line of shoes and the fear of the employes concerned that, with the required number of pairs per day, they could not earn their accustomed wages. The strike began during the vacation of Superintendent Pearce, who, on his return, called the striking girls together in the work rooms, where they found ice cream and cake served—something which has served as a basis for comment in very many newspapers, as introducing a new idea in dealing with labor troubles. During the strike a number of the girls involved secured employment at the Beacon Falls rubber shoe factory, where they are still at work. A rubber workers union has been organized at New Haven, as one result of the strike.

=E. Bers & Co. (Nos. 22-24 South Delaware avenue, Philadelphia) report that they carry in stock about 500,000 pounds of various grades of scrap rubber, and are at all times in a position to fill orders promptly. Orders are in many instances executed on the day of receipt. The firm have also a house at No. 10 1/2 Desbrosses street, New York.

=The Calumet Tire Rubber Co. (Chicago) have been especially busy of late, chiefly on solid tires, though they are doing a good business also in horseshoe pads. They are preparing to introduce a new line of solid tires, but are not yet ready to put out samples.

=The Camp Rubber Co. (Akon and Ashland, Ohio) have filed with the secretary of state of Ohio a certificate of increase of capital from \$50,000 to \$150,000.

=The regular quarterly dividend of \$2 per share on the capital of the Boston Belting Co. is due on October 1 to stockholders of record of September 15.

=The Bishop Gutta-Percha Co. have purchased a plot of ground, 50x98.9 feet, adjoining their premises on the south side of East Twenty-fifth street, New York.

=The Duckwall-Harman Rubber and Supply Co. (Indianapolis, Indiana) announce an increase in their capital from \$10,000 to \$15,000. The business of the company dates from April, 1899. The company are selling agents in their territory for the Gutta-Percha and Rubber Manufacturing Co.—being supplied from the Chicago branch—and also for leading manufacturers in various lines of supplies.

=The Rubber Sole Leather Shoe Co. (South Framingham, Mass.) are stated to have entered into a contract for the manufacture of their shoes by J. W. Russ & Co., of Haverhill, Mass.

=The Goodyear Tire and Rubber Co. (Akron, Ohio) are mentioned as having purchased a touring car for use in testing automobile tires—a three cylinder 30 H.P. machine, with 34 inch wheels and a speed capacity up to 50 miles an hour.

=After twenty-four years spent in the rubber business in Cleveland and in Boston, Mr. Alfred L. Lindsey, president of the Stoughton Rubber Co., Boston, severs his connection with rubber and goes into coffee and tea, the new position being sales manager for the Chicago house of the well known firm of Chase & Sanborn. For ten years past Mr. Lindsey has been an active factor in the mackintosh business in Boston and has left a record as a hard, successful, and conscientious worker. The New York management of the Stoughton Rubber Co. part with Mr. Lindsey with the greatest regret and as an indication of their appreciation of his services presented him with an elegant complete silver service. The good wishes of the whole trade will go with Mr. Lindsey.

=Few perhaps, even in the rubber footwear trade, appreciate the remarkable growth of the business of the Mishawaka Woolen Manufacturing Co. In the last six years business has increased seven fold, the sales last year amounting to over \$4,000,000. To take care of this business the building of additions has gone on almost continuously. At the present time foundations are being put in for a storehouse for crude stock and for manufactured goods. This house will be 150x280 feet five stories, of brick, and connected with the main factory by bridges.

PERSONAL NOTES.

THE Rev. Dr. Edwin S. Lines, who has been chosen bishop of the Episcopal diocese of Newark (New Jersey), is the subject of a sketch in *Leslie's Weekly* (New York), which states he is a native of Naugatuck, Connecticut, where, in his early years, he worked in a rubber factory to earn money to help pay his way through Cheshire Academy. He was graduated from Yale in 1872, and after studying for the ministry and accepting a small-

er pastorate, he became rector of St. Paul's Church, in New Haven, which position he has held until now.

=Colonel Samuel Pomeroy Colt, president of the United States Rubber Co., and Mr. William R. Dupee, president of the American Rubber Co. (Boston) were at Aix-les-Bains during August, returning at the end of the month to Paris, where Mr. Russell Colt, son of Colonel Colt, left the party to return to his studies at Yale University. Colonel Colt arrived at home late in September.

=George S. Andrus, general manager of the La Crosse Rubber Mills Co. (La Crosse, Wis.), after an absence of two months from active business with an attack of appendicitis, is again at the helm, and pushing things with his old time vigor.

=Mr. B. T. Morrison, general manager of the Reading (Mass.) Rubber Manufacturing Co., accompanied by Mrs. Morrison, has been making a tour of Europe.

=Mr. E. D. Hewins (Boston), well known to the New England rubber trade as an enterprising cloth merchant, has lodged with the Interstate Railway Commission, a complaint regarding the practice of the New York, New Haven and Hartford railroad of charging as much for a parlor car seat for a short distance, as it does from Boston to New York.

=Mr. and Mrs. Charles Varnum Perry, of Bristol, Rhode Island, celebrated their silver wedding on September 17. Mrs. Perry was Mary Isabel Trotter, daughter of the late Andrew Ramsay Trotter, who was treasurer of the National India Rubber Co. for a long time.

THE FIGURES THAT GOT MIXED.

In a late issue *The Boot and Shoe Recorder* (Boston) observed:

THE INDIA RUBBER WORLD is noted for the exactness of its statements. Editor Pearson never prints any item of news without first verifying it. Therefore we are pleased to learn, on the authority of THE INDIA RUBBER WORLD of September 1, that the Boston Rubber Shoe Co., in its two factories, has a capacity of 332,000 pairs of boots and shoes daily. We haven't time just now to compute what the yearly production would be if they run at that full capacity every day except holidays, but we congratulate the Boston Rubber Shoe Co. on their ability to sell all the goods which they can manufacture.

The mistake occurred in the simplest manner imaginable. Editor Pearson was engaged in solving two problems at once: (1) the daily ticket of the Boston Rubber Shoe Co. and (2) the number of times Editor Putnam had announced in the columns of the *Recorder* the fact that "Lester Leland is in New York this week." The first was intended as an item for THE INDIA RUBBER WORLD and figured 55,333 pairs, and the second to be used as a cure for insomnia and totaled 332,000 insertions. The totals were transposed in the editorial mind. That's all.

WELLINGTON MACKENZIE, No. 48 Yorkville avenue, Toronto has filed a claim for a deposit of asbestos on the shore of Lake Temiscaming, about two miles from New Liskeard, on the Ontario side of the lake—the first to be discovered in Ontario. Mr. MacKenzie informs THE INDIA RUBBER WORLD that the material is abundant and of very fine quality, the fiber being four inches long.

A TRADITIONAL nickname for Akron—one that has been in use for years—is disappearing. That name was "Tip-top city," having its origin partly in the fact of Akron's elevation, being probably the highest city in the state. The name which is taking its place is "Rubber city." Cigars, pencils, and many things in the way of advertising matter are being branded "Rubber city," and the Akron public are taking up the name with interest.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The manufacturers of automobile tires have long felt that, as long as they furnish guarantees regarding quality and workmanship, there should be certain rules as to their application to various rims and different weights of vehicles. Not only will guaranteed tires under such rules give better service but they will in the long run drive out the cheap unguaranteed tires. The meeting of tire manufacturers in New York a few days ago was attended by representatives of several Akron concerns, who apparently believe that the result will be a better condition both for the manufacturers and the users of tires. Among the Akron men at the conference were Colonel George T. Perkins, president of The B. F. Goodrich Co.; F. A. Seiberling, manager of The Goodyear Tire and Rubber Co.; A. H. Marks, vice president of The Diamond Rubber Co.; and H. E. Raymond, general sales manager of the Goodrich company.

"The manufacturers of rubber tires," said an official of a local rubber company, "have long viewed with concern the tendency toward cheaper tires, and it has been felt for some time that eventually the manufacturers would have to get together on some such plan as has now been agreed upon. Automobile makers have used tires in many instances of too light construction for the weight of the machine, and both the manufacturer and the user have suffered in consequence. Naturally tire makers have to guarantee their tires, and it has been found that by reason of the carelessness in fitting light tires to heavy machines we have suffered, while the users have not been satisfied. Tires have been fitted to rims that were not at all suitable, and the conditions in a number of particulars have not been such as to give satisfaction. Together with this state of affairs has come the tendency toward making cheap tires. Automobile makers have tried to get them as cheaply as possible, from motives of economy, and have thus created a demand for a grade of tires which has been very unsatisfactory. Had this tendency died out, there would have been no reason for an agreement among the manufacturers, but it has been growing worse, and we were confronted with a serious problem which could be successfully solved only by an agreement to make automobile makers conform to certain conditions which were determined upon at our meeting last week. One of these conditions was that our guarantees on tires would not be binding unless the tires are fitted to certain rims approved by us, and that only tires of certain weights shall be used on machines of certain weights. We hope by this method to be able to produce a grade of tires which will give the user better satisfaction. It is to be a fight between quality and price, and we expect quality to win."

The tire makers are of the opinion that the agreement entered into will be the means of making conditions better all round. No man wants to buy a tire unless it is guaranteed, and this fact, it is calculated, will cause the makers of automobiles to be more careful in the selection and fitting of tires to their machines. A scale of sizes for "axle weights" has been adopted, this term being used by automobile makers to indicate the burden borne by each axle, which is approximately half the car, though not uniformly so. By making the schedule according to "axle weights," the tire agreement permits tires of different sizes to be used on front and rear wheels of the same automobile.

A certain group of rim makers have agreed to make their rims exactly according to specifications furnished by the tire makers and to allow the tire men to keep inspectors in the rim factories to mark O. K. all rims approved. Tires not on rims

so marked and on any cars not in accordance with the weight schedule have not the makers' guarantee. This is a check calculated to keep the automobile men in line, for no man wants to buy tires not guaranteed.

Regarding prices a prominent tire man says: "Any tire maker can furnish tires at any price demanded. We have done this, and the result has been great dissatisfaction. Now we are going to determine for ourselves what grades to make and fix our own prices, and the vehicle people can take them or leave them. Buyers of automobiles will be willing enough to pay more for tires if they give better service."

The tire makers have withdrawn all former quotations on tires, calling attention in their circulars to the increased cost of rubber and of Sea Island fabric.

* * *

WHEN the tire season of 1903 is over it will be found to have been the best in the history of the trade. Early in the season the rubber manufacturers here foresaw that the trade this year would be a large one, and made extensive preparations to take care of it. As a result they have been able to turn out large numbers of tires, and to keep abreast of the demand. The experience of the Firestone Tire and Rubber Co. is only one of the many which might be cited. When this company was organized it was the intention to have its tires manufactured by other companies. After a brief experience of this sort it was found that the demand for tires was so great that the company was warranted in erecting a plant. Since the plant was placed in operation it has not been idle a day, and it is the largest plant in the world devoted entirely to the manufacture of solid rubber tires. Other local companies which manufacture tires have been busy all season, some of them not being able to accumulate a stock. Local manufacturers have tried hard to keep up the standard of quality of their tires, in spite of demands for low priced goods, and jobbers are beginning to realize that the cheap tire is not the one to push. The demand for heavy tires for trucks, fire engines, and other heavy vehicles has been brisk and some of the local factories have enjoyed a good business in this line. The demand for bicycle tires has not been as large as in former years, but still the trade has been active enough to keep the machines in local plants pretty busy.

The bicycle tire contracts will open with October and present activity in the market make it evident that the coming season will be a busy one, probably surpassing the present season. An active campaign is also promised in the garden hose business. Contracts will be let during the next two months, and from present indications great activity in this trade is anticipated.

* * *

ARRANGEMENTS are being made by local manufacturers for the big automobile shows, and they will show some first class goods, heavier in proportion to the weight of the machines than ever before. The detachable or clincher tire has apparently almost supplanted the single tube tire, and well posted tire men are of the opinion that the coming shows will demonstrate this fact. The B. F. Goodrich Co., the Diamond Rubber Co., and the Firestone company will have exhibits at all the principal shows.

Local tire manufacturers will probably fight shy of the carriage and automobile shows which are not promoted by some recognized association. In the past it has been customary for them to allow themselves to be "held up" for large sums for space in which to make a display of their goods, at almost any show. Many of these shows have been promoted by private individuals for the money there is in it, and the Akron manufacturers cannot see where they can make the displays they have been in the habit of doing with advantage to

themselves. They have had to pay heavily for permission to display their goods, and they do not believe the advertising has been sufficient to warrant them to make the expenditure. Of course they will have men on the grounds looking for business, but the large displays they have made heretofore will be lacking. This has been practically decided upon in connection with the shows operated for private gain, and what action will be taken in regard to the legitimate carriage and automobile shows in this respect is problematical. According to the opinion of a man well known in the rubber tire trade, this action may be the beginning of a movement among local tire makers to "cut out" displays of this nature altogether.

* * *

THE annual meeting of the Whitman & Barnes Manufacturing Co. was held in this city on September 3. The election resulted in but one change in the officials, Hon. George W. Crouse retiring from the directorate in favor of J. A. Vining, of Akron. Reports from the officers showed that the business, particularly in the rubber department, had been very good during the past year, a dividend of \$1 per share being ordered, payable October 1. Mr. Vining, who succeeded Mr. Crouse, will have charge of the manufacturing interests in both Akron and Chicago. The officers are: *C. E. Sheldon*, Akron, president; *George E. Dana*, Syracuse, chairman; *William W. Cox*, St. Catharines, Ontario, vice president; *William Stone*, Chicago, treasurer; *C. E. Caskey*, Chicago, assistant treasurer; *James Barnes*, Syracuse, N. Y., secretary; Hon. *Frank Hiskok*, Syracuse, general counsel. The directors are: Messrs *Sheldon*, *Dana*, *Cox*, and *Hiskok*—named above—and *I. C. Alden*, *W. H. Gifford*, *George C. Kohler*, *C. I. Bruner*, and *J. A. Vining*.

* * *

THE article in the August number of THE INDIA RUBBER WORLD on fires in rubber factories was of interest here, where the big rubber companies have taken exhaustive measures to be prepared in the event of a fire. Perhaps there is no other rubber factory in the country better equipped for fire protection than that of The B. F. Goodrich Co. This company have a well drilled fire department of their own, equipped with every convenience for fighting fire, and besides their plant is within a minute's run of No. 4 engine house. Within the factory the company have a fire alarm system connected with this house which communicates to the firemen the exact spot where a fire is located, so that no time is lost in getting to it. Fires, however, are a very rare occurrence at this plant, owing to the care which is exercised in handling chemicals, etc. Some other rubber factories here are also well equipped with fire fighting apparatus.

* * *

IT is understood that at the annual meeting of The Diamond Rubber Co. in October plans for the construction of a handsome new office building will be decided upon, and contracts let as soon as possible thereafter. Need of an office building has long been felt by this company, but for the past two or three years they have been so busy erecting buildings in connection with their plant that the office building has been lost sight of. It is said that the reports to be presented at the annual meeting will show that this year has been the most successful in the history of the company. Rumor also has it that The B. F. Goodrich Co. have found their new addition insufficient to accommodate their growing trade, and that they will also erect an addition next spring.

* * *

WORKMEN are busily engaged in installing machinery in the plant of the Superior Rubber and Manufacturing Co. at Cuya-

hoga Falls, and it will be only a short time until the plant is ready for operation. The company was organized over a year ago, and about the middle of August was reorganized, at which time final arrangements were made for equipping the plant. The company will manufacture dipped goods, employing about 50 people at first. Mayor E. M. Young of Cuyahoga Falls, was one of the promoters of the new company, and it was through his efforts that it located in Cuyahoga Falls instead of Akron, as at first intended. The officers now are: *W. J. Bailey*, Cleveland, president; *W. J. Hart*, Cleveland, vice president; *E. M. Young*, secretary and treasurer; *E. J. Ellis*, general manager.

Mr. H. B. Camp, president of the Faultless and Camp rubber companies, had a narrow escape from death on August 31. He was experimenting with natural gas in one of the kilns at the plant of The L. W. Camp Co., of this city, in which he is interested. A defective valve allowed the kiln to be filled with gas, and when Mr. Camp applied a match to the burner under the kiln there was an explosion which demolished the kiln, knocked three or four workmen down, buried one man under a pile of bricks, and threw Mr. Camp backwards against a brick wall. Fortunately he was not injured beyond a few bruises, but the damage to the plant was considerable.

The Ashland Rubber Co., recently promoted by Mr. Frank Ward of Barberton, has passed into the hands of Ashland people. Mr. Ward, who has been general manager and secretary, and Walter Leatherow, superintendent, have resigned. Mr. A. V. Snyder, who was formerly connected with The B. F. Goodrich Co., is understood to be slated to succeed Mr. Ward. By the change of the management, it is claimed that money will be saved, and that it will not injure the business in any way.

Reports from Ashland indicate that the Camp Rubber Co. are doing the biggest business in their history, and that their trade in the line of articles manufactured by them is constantly on the increase. The company have just installed a new 250 H.P. engine, the increased business of the company making this move necessary.

Every little while there is a rumor to the effect that the plant of the People's Hard Rubber Co. here will be leased by some company interested in the manufacture of automobiles. The latest rumor was that the Peerless Motor Works of Cleveland would be removed to Akron and would occupy the plant, but so far it has been impossible to secure a confirmation of the rumor.

Mr. Don O. Allen, manager of the tire department of the Diamond Rubber Co., and Miss Blanche Hale, daughter of Mr. and Mrs. O. W. Hale, of Akron, were married on the evening of September 9, the ceremony being performed by the Rev. D. T. Thomas, of Youngstown. Mr. and Mrs. Allen will reside at No. 23 Hawthorne avenue, Akron.—Mr. Frank Richardson Peabody, manager of the reclaiming plant of the Diamond Rubber Co., and Miss Ethel Webb Wright, daughter of Dr. and Mrs. S. J. Wright, of Akron, were married on September 17, the ceremony being performed by the Rev. Howard S. MacAylene, of Akron.

James W. Hoffert, assignee of the People's Hard Rubber Co., has been ordered by Probate Judge Pardee to proceed at once to offer the claims of the company to the highest bidder.

The suit of the Goodyear Tire and Rubber Co. against the Consolidated Rubber Tire Co. has been transferred to the United States district court for northern Ohio.

Goodrich tires were used by Charles J. Glidden, of Lowell, Massachusetts, in his automobile trip beyond the Arctic circle, and Diamond tires were used in the trans-continental trip of L. T. Whitman and E. T. Hammond in their 850-pound Oldsmobile.

TIRES AT THE BOSTON CARRIAGE SHOW.

BY A RESIDENT CORRESPONDENT.

FOR a city far removed from the great carriage centers of the country, the thirty-first annual convention of the Carriage Builders' National Association, held at Mechanics Building, Boston, September 21-27, was a big success. While not as large by any means as the conventions of New York, Philadelphia, and perhaps other places, yet there was a very large and varied display of the products of the manufacturers.

The rubber trade was well represented in the exhibition held in connection with the convention, showing tires and other rubber goods for vehicles of all kinds. According to one authority, generally speaking, few contracts were made by the manufacturers of tires, in view of the contemplated pooling of issues of all the large manufacturers for an increase in prices. Rubber men say that the general attendance at the show far exceeded their expectations. Prominent carriage manufacturers from all parts of the country were present, the visitors numbering about 3000.

The Firestone Tire and Rubber Co. (Akron, Ohio) had a good exhibit of high grade rubber tires for carriages and automobiles. The special feature was the company's sidewire tire for heavy autos, fire apparatus, etc. The claim is made that 90 per cent. of the motor cars in commercial use in Boston are equipped with the Firestone tire. The display was in charge of A. J. Greene, Boston manager; H. S. Firestone, general manager of the company; William Wells, New York salesman; J. M. Gilbert, general salesman; and R. J. Firestone, Chicago manager.

The Diamond Rubber Co. (Akron, Ohio) displayed rubber tires ranging from a baby carriage to heavy autos, and also goods in the mechanical rubber line. Solid, cushion, and pneumatic tires were shown, and a new feature was the Diamond detachable "1904" auto tire, which is stated to be 50 per cent. heavier than formerly. O. S. Tweedy, Chicago, was in charge, assisted by J. R. Van Dusen, of New York, and W. P. Cronin, W. T. Helfer, and J. S. Wardell, Boston.

The India Rubber Co., of New Brunswick, New Jersey, formerly of Akron, Ohio, exhibited cushion tires, two wire carriage tires, pneumatic bicycle tires and the Wheeler endless solid motor tire. R. A. Brine and Frederick W. Dogherty were in charge.

The Sweet Tire and Rubber Co. (Batavia, New York) made a specialty of rubber tires, a new single cushion tire in particular. A. W. Caney, vice president, and George E. Perrin, treasurer, were in charge.

The largest and most varied exhibit was that of the Good-year Tire and Rubber Co., Akron, Ohio. A fine display of solid rubber, cushion, and pneumatic carriage tires, and also rubber sundries, was made. The new goods shown were a flat tread auto tire and an endless solid rubber tire for delivery wagons, pleasure cars, fire apparatus, and the like. A curiosity was shown in the shape of a fire wheel 56 inches in height, the average being about 45 inches, and equipped with a solid rubber tire. A new tire machine was also on exhibition. G. M. Stadelman, manager of the vehicle tire department, was in charge.

The Fawkes Rubber Co. (Denver, Colorado) made its first exhibit of the Fawkes indestructible airless rubber tire for all classes of vehicles and bikes. It is claimed for the airless tire that it possesses all the good qualities of the pneumatic tire, but is more lasting and cannot rim-cut or creep, as the tire is elastic and hugs the rim closely. B. F. Courtney and L. F. Stillwell were in charge.

The Hartford Rubber Works Co. (Hartford, Conn.), while showing all styles of rubber tires, made a specialty of solid rubber tires of a high grade. Mechanical rubber goods were also shown and a tire mounting machine. Manager E. R. Benson, of Boston, was in charge.

The B. F. Goodrich Co., Akron, Ohio, exhibited under the direction of its New England agents—C. S. Mersick & Co., Frank W. Tucker, manager—a varied line of solid, endless, side wire, two wire, single tube, clincher, and pneumatic tires.

The Kelly-Springfield tire was exhibited by the Consolidated Rubber Tire Co. (New York and Akron, Ohio). The concern claims to have made the first rubber tires and the first to apply the two-wire idea. Stanley F. Hall was in charge.

Other tire exhibitors were Morgan & Wright (Chicago), The Stein Double Cushion Tire Co. (Akron, Ohio), the Milwaukee Rubber Works Co. (Milwaukee, Wis.), Alden Rubber Co. (Akron, Ohio), International Rubber Manufacturing Co. (New York), International A. and V. Tire Co. (Milltown, N. J.), Victor Rubber Tire Co. (Springfield, Ohio), and the Empire Rubber Manufacturing Co. (Trenton, N. J.).

The Monarch Carriage Goods Co. (Cincinnati) made quite an extensive display of buggy boots, storm aprons, and hardware goods, in the construction of which rubber is used to more or less extent. Storm aprons, entirely of rubber, were shown, and also a deck-panel boot on which rubbers are used for holding the boot down, rubbers having been found more desirable than wire springs. Charles Weiclein had charge.

A very good line of rubber carriage cloth was exhibited by The Eureka Rubber Manufacturing Co. of Trenton, N. J. The company claims a daily capacity of 5000 yards at its new factory, with a contemplated increased capacity next year.

In the rubber line, the Morgan Potter Co., Fishkill-on-Hudson, N. Y., exhibited rubber shoes for brake blocks.

NEW TRADE PUBLICATIONS.

THE SUPERIOR RUBBER TYPE CO. (Chicago) issue their Catalogue No. 18, devoted to a great variety of appliances for use in connection with rubber type, including printing presses, mounts for stamps, hand and dating stamps, and the like, besides which 30 pages are devoted to the different faces of type kept in stock. Wholesale prices are given. The catalogue is liberally illustrated, and is the most complete catalogue in this line that has come to our notice. [6 $\frac{1}{2}$ " \times 9 $\frac{3}{4}$ ". 128 pages.]

THE OHIO RUBBER CO. (Cleveland and Cincinnati) have sent out a handsome catalogue of Stormproof Clothing to their trade in Ohio, Michigan, Indiana, Kentucky, Tennessee, West Virginia, Pennsylvania, and New York state. The company's stock is large and varied, and they are understood to be doing an excellent business. They assert: "The demand for all kinds of waterproof clothing has never been so universal as now." This catalogue has won the most complimentary mention from journals devoted to artistic advertising—for instance, from *Profitable Advertising*, of Boston. [4" \times 9 $\frac{1}{4}$ ". 16 pages.]—A net price list to dealers accompanies the catalogue.

MULCONROY CO., INC. (Nos. 1213-1215 Market street, Philadelphia) issue their net trade catalogue No. 16, devoted to Waterproof Clothing for Man and Horse—"Liberty" brand. It is liberally illustrated, gives prices and an adequate description of the goods listed, besides which there is a department devoted to Oiled Clothing. [3 $\frac{1}{2}$ " \times 5 $\frac{1}{2}$ ". 24 pages.]

SWEET TIRE AND RUBBER CO. (Batavia, New York) have issued a descriptive list of Sweet's Patent Rubber Tires. [6" \times 3 $\frac{1}{4}$ ". 11 pages.]

THE TEXTILE GOODS MARKET.

OCTOBER finds the textile goods market, as related to the rubber trade, in a somewhat waiting attitude. At this time last year most of the rubber manufacturers had made their arrangements for cotton duck covering the entire twelve months, and both the seller and buyer knew where they stood. The market for raw material at that time was steady, the manipulators in the Cotton Exchange had not commenced their operations, and the prospective dearth of the staple had not dawned upon the market. Consumers who were averse to covering their requirements for the year at a stipulated figure saw no impediment to their going ahead on the principle of buying their ducks and sheetings as their needs dictated, although it was made very plain later in the season that they had made a mistake, and a costly one, for they could have contracted for all the fabric they needed for the year at 17½ cents per pound, whereas they have been paying at intervals from 20 to 24 cents. It is a reasonable deduction that those who contracted for the year realized greater profits upon their rubber goods than did those who paid the higher price for cotton goods.

Considering the status of the market for cloth, it is hardly necessary to state that rubber manufacturers who covered their requirements for the year have taken up to the maximum of their contracts. Few of them dreamed that they would require so much duck to carry them through the year, but there was nothing to be lost in making the outside limit of their takings large enough to meet any emergency, and that it was a very wise move on the part of the rubber people is shown by the fact that they have not only called for every pound of duck that was coming to them, but in some instances their requisitions have been from a dozen to a hundred bales in excess of what was due. The business acumen of these manufacturers is to be commended, but it failed in its purpose, for the duck mills charged up the extra supply on the basis of 22 cents, instead of allowing it to go in with the amount called for in the contract at 17½ cents. The duck people claimed that they were already losing too much money by making 17½ cent duck out of 13½ cent cotton. So much for the season just closing.

In regard to business for the coming year both the rubber manufacturers and cotton goods people are all at sea. The unsettled condition of the staple market has made it next to impossible for them to get together on the price question. Both factions are agreed that cotton is to rule higher, but how much higher is the question. The mills are now paying 13½ cents for cotton, and are selling duck on the basis of 22 cents for regular, and 24 cents for some special yarn goods. Rubber manufacturers are not willing to renew contracts on this basis, and the duck mills are unprepared to come to a settlement on a lower level. New business is therefore at a standstill. Of course the rubber mills have sufficient duck to carry them along for awhile, but in the meantime there is some close figuring going on between buyers and sellers. It is safe to say that scarcely a contract for the coming year has been put through yet, and when anything will be done in this direction depends entirely upon how soon the cotton market settles down. Colonel Henry G. Hester, secretary of the New Orleans Cotton Exchange, gives the total visible supply as 1,132,623 bales against 1,766,667 last year. There is very little reason to believe that the cotton duck mills will be able to cover their requirements for the next year with cotton at less than 10½ or perhaps 11 cents against 8½ and 9 cents last year. During the past week there have been many representatives of rubber manufacturers in the market, endeavoring to get some idea as

to outlook for the next season, but they have been disappointed. Emissaries of the duck sellers are also visiting the rubber people for a like purpose, and both factions are patiently endeavoring to reach an understanding. This is very necessary, for the market for rubber goods is permeated with activity, and the consumption of goods for the next season will doubtless be heavy.

Following are the prices of cotton middling uplands spots at the ports of New York, New Orleans, and Liverpool on the dates given:

	New York.	New Orleans.	Liverpool.
September 5	12½ cents	11½ cents	6.40d.
September 12	12 cents	10½ cents	6.52d.
September 19	11¾ cents	10½ cents	6.48d.
September 26	11¼ cents	9¾ cents	6.06d.

The market for cotton sheetings is affected in a similar way, although as a rule, this class of fabrics are bought more on the hand to mouth principle, by the manufacturers of rubber footwear. During the past month there has been rather a quiet demand, consumers preferring not to cover their needs any farther than actually necessary, on account of the firmness of the market. The mills are not in possession of large stocks of sheetings, and the outlook is for higher priced goods for the coming season. As will be seen by the subjoined table, some tickets have changed in price, influenced by higher priced cotton. Sellers, however, have impressed upon buyers the fact that the prices at which ducks and sheetings are now being sold must not act as a factor when it comes to renewing contracts for the next season.

Felt mills throughout the country have had a fair demand for goods, although prices have been firm at a higher level than formerly, owing to the statistical position of the wool market. The advance in the price of all classes of raw textiles will cause prices on finished goods of every description to seek a higher level.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds. to Lb.	
36" Household Favorite, 56x60, 4.00			5¼ cents.
40" Household Favorite, 56x60, 3.60			5¾ cents.
36" Henrietta, L. L., 48x52, 4.00			5 cents.
39" Henrietta, 68x72, 4.75		(net)	5 cents.
38½" Henrietta, 64x64, 5.15			4½ cents.
40" Henrietta, 48x40, 2.85		(part waste)	6¼ cents.
36" Florence C., 44x44, 6.15			4 cents.
36" American L., 64x64, 5.00		(net)	4¾ cents.
40" Majestic C. C., 48x48, 2.50			7¾ cents.
40" Majestic B. B. B., do 2.70			6¾ cents.
40" Majestic B. B., do 2.85			6½ cents.
40" Elcaney, do 3.60			5½ cents.
36" India, do 3.00			5¼ cents.
<i>Sheetings.</i>			
40" Selkirk... 7½c.	40" Selkirk... 7½c.	40" Shamrock... 9 c.	
40" Hightgate... 5¼c.	40" Sellow... 7¼c.	<i>Ducks.</i>	
40" Hightown... 6 c.	48" Mohawk... 10 c.	40" 7 oz. Cranford... 8¼c.	
40" Hobart... 6½c.	40" Marcus... 5½c.	40" 8 oz. Chartres... 8½c.	
40" Kingstons... 7½c.	40" Mallory... 5 c.	36" Capstans... 4 c.	
39" Stonyhurst... 5¼c.	36" Capstans... 4 c.	<i>Osnaburghs.</i>	
39" Sorosis... 5 c.	40" Iroquois... 9 c.	40" 10 oz. Carew... 11 c.	
40" Seefeld... 8 c.		40" 11 oz. Carita... 12 c.	

A WRITER in the daily press from Brisbane, Australia, mentions casually the wonderful gum cement that the natives know how to make, and which they use in fastening their shields together. Will some Australian reader give further light concerning this, particularly if it is a rubber cement?

FILLER FOR AUTO TIRES.—A well known automobilist claims that the following filler for tires acts as an anti-leak substance very successfully in cases of ordinary puncture: Glycerine, 92 parts; gluten, 8 parts. Heat the glycerine in water bath, add the gluten, and stir until thoroughly mixed.

SOME FACTS REGARDING LITHOPONE.

IN an article in the *Zeitschrift für angewandte Chemie* Dr. E. Kochs and Dr. F. Seyfert call attention to the fact that lithopone, the pigment so much employed in the manufacture of rubber goods and in the linoleum industry, is capable, by reason of its excellent covering power and cheapness, of proving a serious competitor to the expensive body colors. The manufacturers of lithopone at present guarantee a certain amount of zinc sulphide in the various grades (green, red, white, blue, or yellow seal), but the analyses carried out by the authors for a number of years have demonstrated that very few samples actually contained the percentage guaranteed. The authors, after reviewing the various modes of production of lithopone and also the manufacture of sulphopone, discuss the method of analyzing lithopone and give as a reason for the non observance of the warranty the fact that the entire percentage of zinc contained in the lithopone is not in the form of zinc sulphide, but that zinc salts soluble in acetic acid of 5 per cent. are likewise present. They occur therein, generally in the shape of zinc carbonate, up to 12 per cent., which is due to a defective mode of production.

For the purpose of separating the zinc sulphide from the other zinc salts, acetic acid of 5 per cent. should be used and it is necessary, besides, to determine the amount of sulphur contained in the lithopone for verification. The final conclusion arrived at by the authors is that 1 to 2 per cent. of zinc soluble in dilute acetic acid hardly has any influence upon the quality of the lithopone, but a larger percentage should not be coun-

tenanced by the buyer. Only fifteen of the samples received showing the guaranteed amount of zinc sulphide, it is within the buyer's interest to always have the merchandise analyzed. The dealers, in giving the guarantee, take it for granted that in the production all the zinc combines with the sulphur, while as a matter of fact this is not always the case, if the manufacturing process is imperfect. The duty, therefore, devolves upon the manufacturer to have the article analyzed so as to be sure that the merchandise actually contains the warranted amount of zinc sulphide. If the entire amount of zinc found is accepted as zinc sulphide almost all the lithopones conform to the guaranteed amount. For this reason the manufacturers are unwilling to accept analyses in which this is not done, losing sight of the fact that with a faulty mode of production the reaction between barium sulphide and zinc sulphate does not always take place in a perfect manner.

Moreover, attention is called to the fact that lithopone of good quality should not contain more than 0.2 to 0.3 per cent. of moisture. A lithopone holding in its composition more than 2 per cent. does not mix with oil as thoroughly as it ought. The paper closes with the advice to pay attention to a very careful taking of the samples; this is essential for the conformity of the analysis, but is still frequently lost sight of.

As lithopone is extensively employed in the rubber manufacture, as well as in the linoleum industry, the above information may also interest our readers, since frequently a higher percentage of zinc carbonate as well as an increased amount of moisture have a disturbing action.—*Gummi-Zeitung*.

REVIEW OF THE CRUDE RUBBER MARKET.

AT the time of going to press with this issue crude rubber is selling at higher prices than at any time in the past history of the trade, with the single exception of a brief period in 1882, when the extreme price of \$1.20 per pound was reached. From present indications it is possible that, before these pages reach our readers, an equally high price may again be reached. The market was firm and with an upward tendency throughout September, but the most marked advance occurred immediately after the Antwerp sale, on the 17th, where all the grades offered brought much higher prices than the brokers' estimations.

The advance has given rise in some quarters to conjectures that speculative trading is the cause. Such reports are always rife at such a time, but they are not always verified by subsequent developments. It is exceedingly doubtful whether any influence in the trade could long hold the price of crude rubber at an unwarrantably high figure, and the risks attending an attempt to "corner" rubber—greater, perhaps, than in the case of any other commodity—are too great and too well understood to be attempted by a house expecting to be engaged permanently in the trade. A glance at the diagram on another page of this Journal will show that rubber prices never remain long at one level; advances are apt to be sudden, even when rising to a very high figure, and the decline is equally sudden and just as marked.

Even if control of the market could be gained by speculative traders, the length of time during which extreme prices can be maintained is never longer than a manufacturer, with a fair supply on hand, can afford to remain out of the market. THE INDIA RUBBER WORLD is assured by the management of one of the largest manufacturing concerns in the trade that all of

its factories can be operated for the next five months without the purchase of another pound of rubber, and an extreme advance has seldom been maintained for five months at a time. Of course all the manufacturers are not so well supplied, and there is always somebody forced to pay the highest current price, or forego business.

But to recur to speculation. To a certain extent all buying and selling is speculation. The question here is whether, in a period of short stocks, control of them has been obtained for the purpose of forcing consumers to buy at exorbitant prices. When Vianna got up his great rubber "corner" years ago, although he actually controlled most of the supply of Pará rubber, he was kept in a nervous state because small lots of rubber not under his control kept dribbling into the market at lower prices than he demanded, and every such sale, no matter how small, weakened his position. A similar experience awaits every effort to buy up all the rubber in sight with a view to making large profits at the expense of the manufacturer. Besides, the market is infinitely wider to-day than in Vianna's time, and the task of gaining control of all the sources of supply would be proportionately greater. After a "corner" has been effected it cannot last beyond the arrivals from a new crop; besides, it may collapse any day through a decline in prices from causes beyond the control of speculators, and impossible for them to foresee.

But high prices of a commodity due to short supplies at the moment is another thing. It is what happens when there is a coal "famine"; even cabbages cost the housekeeper more when the market gardener has had a poor season. It would be a strange thing now, in view of the undoubted small supplies of rubber, and the active consumption, if prices were not high.

As to how long present prices will prevail, one man's judgment is as good as another, and no prediction need be offered here.

Arrivals of the new crop at Pará since the beginning of the season have been encouraging in extent. The figures herewith [including Caucho] give details for three years past, except that the record for the month just closed is brought down only to the 28th:

	1901.	1902.	1903.
July... .. tons	1260	1290	1280
August	1290	1370	1230
September.....	1940	1670	21075
Total, First quarter	4490	4330	4585

[a—To September 28, 1903.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on September 30—the current date:

PARÁ.	Oct. 1, '02.	Aug. 29, '03.	Sep. 30.
Islands, fine, new.....	70@71	96@97	107@108
Islands, fine, old.....	72@73	100@101	112@113
Upriver, fine, new.....	74@75	99@100	110@111
Upriver, fine, old.....	77@78	101@102	112@113
Islands, coarse, new.....	45@46	59@60	68@69
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	59@60	78@79	88@89
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	51@52	61@62	69@70
Caucho (Peruvian) ball.....	55@56	74@75	78@79

The market for other sorts in New York, in which there likewise is an advance to be noted this month, is as follows:

AFRICAN.	Ikelemba.....	93 @94
Sierra Leone, 1st quality.....	91 @92	
Massai, red.....	91 @92	
Benguella.....	75 @76	
Cameroon ball.....	67 @68	
Gaboon flake.....	48 @49	
Gaboon lump.....	50 @51	
Niger paste.....	21 @22	
Accra flake.....	20 @20	
Accra buttons.....	None here	
Accra strips.....	None here	
Lopori ball, prime.....	92 @93	
Lopori strip, do.....	89 @90	

Late Pará cables quote:

	Per Kilo.	Upriver, fine.....	Per Kilo.
Islands, fine.....	65@66	Upriver, coarse.....	78@79
Islands, coarse.....	38@40		68@70

Exchange, 12 $\frac{1}{2}$ d.

Last Manáos advices:

Upriver, fine.....	78@80/58550	Upriver, coarse.....	58550
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Exchange, 12 $\frac{1}{2}$ d.

NEW YORK RUBBER PRICES FOR AUGUST (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.....	95@100	70@76	85@92
Upriver, coarse.....	75@79	56@61	61@68
Islands, fine.....	90@97	67@73	81@88
Islands, coarse.....	59@61	45@48	46@50
Cametá, coarse.....	58@61	46@48 $\frac{1}{2}$	50@51

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us:

"During September there has been very little demand for paper, and almost entirely from out-of-town banks, rates being

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots—in cents per pound; old shoes are a trifle higher; other items not changed [in cents per pound]:

Old Rubber Boots and Shoes—Domestic.....	6 $\frac{3}{4}$ @ 7
Do —Foreign.....	6 $\frac{3}{4}$ @ 6 $\frac{3}{4}$
Pneumatic Bicycle Tires.....	4 @ 4 $\frac{1}{2}$
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	9 $\frac{1}{4}$ @ 9 $\frac{1}{2}$
Heavy Black Rubber.....	4 $\frac{1}{4}$
Air Brake Hose.....	2 $\frac{3}{8}$ @ 3
Fire and Large Hose.....	2 $\frac{1}{2}$
Garden Hose.....	1 $\frac{1}{2}$
Matting.....	1

from 6 @ 7 $\frac{1}{2}$ per cent. for the general average of rubber paper, 6 per cent. being rather exceptional. The outlook is for a firm money market for some time to come."

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.	Total	Total	Total
	Fine and Medium.	Coarse.	1903.	1902.
Stocks, July 31.....	170	54 =	224	362
Arrivals, August.....	413	254 =	667	724
Aggregating.....	583	308 =	891	1030
Deliveries, August.....	443	280 =	723	818
Stocks, August 31.....	140	28 =	168	221

	PARÁ.	1903.	1902.	1901.
	1903.	1902.	1901.	1902.
Stocks, July 31.....	135	40	215	975
Arrivals, August.....	1110	1380	1190	975
Aggregating.....	1245	1420	1405	1450
Deliveries, August.....	1125	1323	1215	800
Stocks, August 31.....	120	97	190	650

	1903.	1902.	1901.
World's supply, August 31.....	1737	2746	2238
Pará receipts, July 1 to August 31.....	2160	2367	2305
Pará receipts of Caucho, same dates.....	300	323	250
Afloat from Pará to United States, August 31.....	364	418	87
Afloat from Pará to Europe, August 31.....	435	468	458

Rubber Receipts at Manaos.

DURING August and the first two months of the crop season, for three years [courtesy of Messrs. Witt & Co.]:

	FROM—	1903.	1902.	1901.	1903.	1902.	1901.
		AUGUST.			JULY-AUGUST.		
Rio Purús.....	tons	294	324	316	457	497	560
Rio Madeira.....		240	283	258	492	546	552
Rio Juruá.....		—	1	42	2	4	60
Rio Javary—Iquitos.....		100	86	62	114	100	115
Rio Solimões.....		15	42	68	25	49	80
Rio Negro.....		3	4	8	15	21	15
Total.....		652	740	754	1105	1217	1382
Caucho.....		47	51	114	208	216	241
Total.....		699	791	868	1313	1433	1623

A CORRESPONDENT at Manáos writes [August 20]: "Everything points to a good rubber crop this year. The Acre troubles being practically settled, hopes are entertained of large shipments from that region, and from the upper Purús. A feature of the month is the number of boats going up river, especially to the Juruá, no less than five having been despatched or now loading for that river. There are, however, troubles brewing on the upper Juruá, the Peruvians having invaded that territory and taken possession of it, declaring it to be theirs. A federal regiment—the Thirty-third—is under orders to leave here for that region as soon as the rivers rise sufficiently to permit steamers to go there. Rubber prices are keeping up and business prospects are looking brighter. The service of the Manáos Harbour is improving, though the new works are progressing so slowly that fears are expressed that when the rush comes the company will find itself unable to handle all the traffic here. Politically the horizon is clear. Governor Nery has arranged that his brother, Colonel Constantino Nery, now a state senator, will succeed him in office. Mr. Alden's manager at Manáos, Frederick H. Sanford, has gone to Europe on a vacation, and the United States consular agency here, which was under his care, is now entrusted to his successor, Mr. Pell."

Antwerp.

At the regular inscription on September 17 the quantity exposed, about 284 tons, of Congo sorts, found buyers. Prices paid show an increase on valuations made at the preceding monthly sale of 7 to 8 per cent., equal to an average

advance of 5 or 5½ cents per pound. Good qualities, such as Lopori, Lomami, and Uelé, reached very high prices. Some principal lots sold were [prices in francs]:

	Valuation.	Sold at.
38,250 kilos Upper Congo—Uelé	8.85	9.57½
6,268 " Upper Congo—Uelé	9.40	10.07½
15,611 " Upper Congo—Aruwimi	8.90	9.67½
13,788 " Upper Congo—Aruwimi	9.35	9.97½
7,944 " Lower Congo thimbles red	5.60	5.85
12,608 " Upper Congo—ordinary	9.55	10.02½
46,048 " Upper Congo—Mongalla	9.40	10.07½
7,995 " Upper Congo—Mongalla	9.50	10.07½
7,247 " Upper Congo—Equateur	9.30	10.12½
4,701 " Upper Congo—Isangl	9.	9.65
5,129 " Upper Congo—Uelé	9.45	10.17½
9,840 " Upper Congo—Lomami	9.50	10.18½
55,015 " Upper Congo—Lopori I	9.40	10.15
24,978 " Upper Congo—Lopori II	8.25	8.77½

[10 francs per Kilo=87½ cents per Pound.]

The next large sale by tender will take place on October 25, when about 425 tons will be offered.

RUBBER ARRIVALS AT ANTWERP.

AUGUST 24.—By the *Albertville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	153,000
Do (Chemins de fer des Grand Lacs)	8,000
Do (Société Anversoise)	22,300
Do (Cie. du Kasai)	470
Do (Société Isangl)	3,500
Société A B I R	37,400
Société Equatoriale Congolais	4,000
Société Coloniale Anversoise.. (Belge du Haut Congo)	15,000
Do (Cie de Lomami)	17,000
Do (La Lulonga)	6,000
Société Commerciale and Agricole de l'Allima	4,800
Société Baniembé	700
Société Coloniale Anversoise	3,000
Do (Süd Kamerun)	1,500
	328,670

SEPT. 14, 1903.—By the *Anversville*, from the Congo:

Bunge & Co. (Société Général Africaine) kilos	111,800
Do (Société Anversoise)	1,400
Do (Cie. de Lomami)	37,500
Comptoir Commercial Congolais	14,000
Société Coloniale Anversoise	21,000
Ch. Dethier	1,400
Société Coloniale Anversoise	17,000
Do (Süd Kamerun)	5,000
Th. Le Bruyne	5,400
	214,500

ANTWERP RUBBER STATISTICS FOR AUGUST.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, July 31. kilos	377,527	689,772	1,040,441	1,133,702	345,205
Arrivals, August. ...	347,062	321,102	286,816	498,188	200,604
Congo sorts	322,136	294,073	267,939	385,738	280,838
Other sorts	24,926	27,119	18,877	112,450	18,766
Aggregating	724,589	1,010,964	1,327,257	1,631,890	644,809
Sales, August.	404,603	254,563	642,902	575,766	244,377
Stocks, August 31. ...	319,986	756,401	684,355	1,056,124	400,432
Arrivals since Jan. 1 ...	3,326,394	3,558,836	3,838,870	4,167,418	2,395,870
Congo sorts	2,971,328	3,295,549	3,511,495	3,806,913	2,094,646
Other sorts	355,066	263,287	327,374	660,505	301,224
Sales since Jan. 1. ...	3,664,513	3,217,144	3,768,464	3,403,285	2,258,778

Liverpool.

WILLIAM WRIGHT & Co. report [September 1]:

Fine Pará.—The market has been strong and active, and prices have advanced by about 3d. per pound. This has been brought about by the smallness of stocks, the small supplies at Pará, and a good demand principally from America—in other words, the advance has not been speculative, but is simply owing to the ordinary law of "supply and demand." Stocks are very small (especially in medium grades), and we anticipate a further advance next month.

EDMUND SCHLÜTER & Co. report Liverpool stocks:

	July 31.	Aug. 31.		July 31.	Aug. 31.
Pará—1st hands. ...	556	349 tons.	Peruvians	222	150 tons.
Fine	461	260 "	Africans	333	305 "
Medium	33	43 "	Mollendo	108	81 pkg.
Negroheads	62	46 "	Mangabeira	70	21 "
Pará—2d hands. ...	425	301 "	Pernambuco	53	45 "
Fine	367	246 "	Manicoba	108	90 "
Medium	19	20 "	Ceará	—	— "
Negroheads	39	35 "	Assare	36	21 "
Total Pará	981	650 "			

London.

EDWARD TILL & Co. [September 1] report stocks:

	1903.	1902.	1901.
Pará sorts	—	—	—
Borneo	28	128	129
Assam and Rangoon	8	11	90
Other sorts	202	396	506
Total	238	535	725
LIVERPOOL { Pará	650	1532	984
{ Other sorts	476	664	1027
Total, United Kingdom	1364	2731	2736
Total, August 1	1781	3053	2944
Total, July 1	2285	3595	3128
Total, June 1	2248	3687	3502
Total, May 1	2539	3788	3597

SEPTEMBER 18.—The activity in this market has been well sustained, and large sales have been made at advancing prices. The stock of first hand Bolivian and hard fine Pará has practically been all sold. Sales include fine hard Pará, very old, 4s. 6d. @ 4s. 7d.; new at 4s. 5¼d. @ 4s. 6d. Negroheads: Scrappy in good demand at dearer rates, with sales of Manóas at 3s. 5½d. @ 3s. 6d. Cametas, spot, 2s. 8½d. Peruvian very scarce—fine, 4s. 5¼d.; fair ball, 3s. 5d. @ 3s. 5½d.; slab, 2s. 9d.; scrap, 3s. 6d. Mollendo, fine, 4s. 4d. Medium grades (Africans and Centrals) in active request; the small supply at to-day's auctions met a good demand, at dearer rates. Madagascar mixed pinky softish, 2s. 11¼d.; Majunga, 2s. 7d.; East Coast good clean niggers, 2s. 8½d.; Assam good clean red, 3s. 7½d.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

September 1.—By the steamer *Bernard*, from Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
Poel & Arnold	37,200	2,800	36,200	1,100=	77,300
United States Rubber Co.	34,600	3,600	9,300	—	47,500
A. T. Morse & Co.	1,100	—	45,400	—	46,500
New York Commercial Co.	23,200	1,700	12,000	—	36,900
William Wright & Co.	—	—	33,500	—	33,500
L. Hagenaers & Co.	8,000	—	3,700	—	11,700
Thomsen & Co.	2,900	—	3,100	—	6,000
Total	107,000	8,100	143,200	1,100=	259,400

September 10.—By the steamer *Maranhense*, from Manóas and Pará:

New York Commercial Co.	104,400	20,700	32,700	600=	158,400
William Wright & Co.	47,900	4,400	95,200	600=	148,100
A. T. Morse & Co.	18,900	300	73,800	300=	93,300
Poel & Arnold	42,100	4,700	9,000	3,100=	58,900
L. Hagenaers & Co.	6,900	600	3,000	—	10,500
Thomsen & Co.	3,600	300	3,500	—	7,400
United States Rubber Co.	4,700	300	1,500	—	6,500
Total	228,500	31,300	218,700	4,600=	483,100

September 22.—By the steamer *Cametense*, from Manóas and Pará:

Poel & Arnold	94,000	33,100	65,200	1,400=	193,700
A. T. Morse & Co.	15,200	3,000	174,900	600=	193,700
United States Rubber Co.	58,200	9,700	61,300	—	129,200
New York Commercial Co.	72,300	11,100	14,100	600=	98,100
William Wright & Co.	23,200	3,100	21,700	300=	48,300
L. Hagenaers & Co.	11,000	1,200	4,400	—	16,600
Robinson & Tallman	8,100	1,700	1,000	—	10,800
Thomsen & Co.	2,300	400	3,400	—	6,100
G. Amsinck & Co.	400	2,700	100	—	3,300
Total	284,700	66,000	346,100	2,900=	699,700

[NOTE.—The steamer *Polycarp*, due at New York on October 3, has on board 135 tons of Rubber.]

PARA RUBBER VIA EUROPE.

		POUNDS.
AUG. 23.—By the <i>Carpathia</i> =Liverpool:		
Poel & Arnold (Fine)	23,000	
George A. Alden & Co. (Fine)	3,000	26,000
AUG. 25.—By the <i>Alliance</i> =Mollendo:		
New York Commercial Co (Fine)	11,500	
SEPT. 1.—By the <i>Arabic</i> =Liverpool:		
Poel & Arnold (Fine)	112,000	
Poel & Arnold (Coarse)	50,000	
Otto Meyer (Fine)	33,768	205,313
SEPT. 4.—By the <i>Germanic</i> =Liverpool:		
William Wright & Co. (Fine)	31,000	
Poel & Arnold (Coarse)	6,000	37,000
SEPT. 5.—By the <i>St. Louis</i> =London:		
A. T. Morse & Co. (Cauché)	56,000	
SEPT. 9.—By the <i>Majestic</i> =Liverpool:		
Poel & Arnold (Fine)	125,000	
Otto Meyer (Fine)	21,898	
Otto Meyer (Coarse)	25,418	
George A. Alden & Co. (Fine)	6,000	175,316
SEPT. 12.—By the <i>Campania</i> =Liverpool:		
George A. Alden & Co. (Fine)	44,000	
SEPT. 17.—By the <i>Oceanic</i> =Liverpool:		
Poel & Arnold (Fine)	90,000	
George A. Alden & Co. (Fine)	38,000	
William Wright & Co. (Fine)	11,000	
A. T. Morse & Co. (Coarse)	11,500	145,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

		POUNDS.
AUG. 25.—By the <i>Alliance</i> =Colon:		
Hirzel, Feltman & Co.	9,200	
L. N. Chemedin & Co.	2,200	
G. Amsinck & Co.	2,200	
Piza, Nephews & Co.	1,900	
Meyer Hecht	1,500	
H. Marquardt & Co.	1,000	
Fidanque Bros. & Co.	800	
Eggers & Heinlein	700	19,500
AUG. 27.—By the <i>Alleghany</i> =Greystown, etc.:		
G. Amsinck & Co.	2,500	
E. B. Strout	1,000	
A. D. Strauss & Co.	1,000	
Andreas & Co.	600	
Lawrence Johnson & Co.	500	
Kunhardt & Co.	800	5,900
AUG. 27.—By the <i>El Sud</i> =New Orleans:		
A. T. Morse & Co.	9,500	
AUG. 29.—By the <i>Santiago</i> =Mexico:		
Fred. Probst & Co.	3,500	
Samuels & Cummings	800	
L. N. Chemedin & Co.	700	
American Trading Co.	300	
H. Marquardt & Co.	200	5,500
AUG. 29.—By the <i>Carpathia</i> =Liverpool:		
Eggers & Heinlein	7,000	
SEPT. 1.—By the <i>Alene</i> =Savannah, etc.:		
Isaac Brandon & Bros.	3,000	
G. Amsinck & Co.	2,000	
J. H. Recknagel & Co.	2,000	
D. A. De Lima & Co.	1,200	
Lawrence Johnson & Co.	1,000	
Jimenez & Escobar	1,100	
For Liverpool	13,500	23,800
SEPT. 1.—By the <i>Segurana</i> =Colon:		
A. Santos & Co.	11,800	
Hirzel, Feltman & Co.	5,600	
Lawrence Johnson & Co.	4,500	
Roldan & Van Sickle	4,100	
L. N. Chemedin & Co.	4,000	
G. Amsinck & Co.	2,700	
Dumarest & Co.	3,200	
J. A. Paul & Co.	2,700	
Isaac Brandon & Bros.	1,300	
Eggers & Heinlein	1,100	
Livingstone & Co.	800	
Everitt, Heaney & Co.	700	
Frame & Co.	700	
Meyer Hecht	400	
R. G. Barthold	200	43,800
SEPT. 5.—By the <i>El Dorado</i> =New Orleans:		
Manhattan Rubber Mfg. Co.	1,500	
SEPT. 8.—By the <i>Valencia</i> =Greystown, etc.:		
G. Amsinck & Co.	2,000	
Wolf & Penitfer	1,000	
J. H. Recknagel & Co.	700	
D. A. De Lima & Co.	300	
For Manchester	1,000	5,000
SEPT. 8.—By the <i>Thespi</i> =Bahia:		
J. H. Rossbach & Bros.	19,000	

CENTRALS—Continued.

SEPT. 8.—By the <i>Saratoga</i> =Colon:		
G. Amsinck & Co.	7,100	
Isaac Brandon & Bros.	2,100	
Meyer Hecht	1,000	
Fidanque Bros. & Co.	800	
Silva, Bussenius & Co.	500	
Mecke & Co.	300	11,800
SEPT. 8.—By the <i>Vigilancia</i> =Mexico:		
H. Marquardt & Co.	1,200	
Fred. Probst & Co.	1,000	
American Trading Co.	600	
E. Steiger & Co.	200	3,000
SEPT. 15.—By the <i>Proteus</i> =New Orleans:		
Manhattan Rubber Mfg. Co.	10,000	
A. T. Morse & Co.	4,000	14,000
SEPT. 14.—By the <i>Atlas</i> =Carthagena, etc.:		
J. Ferro	5,000	
Roldan & Van Sickle	2,600	
Isaac Kubie & Co.	1,500	
Lawrence Johnson & Co.	1,300	
D. A. De Lima & Co.	500	
Kunhardt & Co.	500	
United Fruit Co.	500	
G. Amsinck & Co.	200	
Jimenez & Escobar	200	
D. Ridgely & Co.	700	12,600
SEPT. 15.—By the <i>Yucatan</i> =Colon:		
Hirzel, Feltman & Co.	44,700	
American Trading Co.	19,100	
G. Amsinck & Co.	7,000	
Lawrence Johnson & Co.	12,300	
A. Santos & Co.	6,000	
Isaac Brandon & Bros.	4,000	
H. Marquardt & Co.	2,900	
W. Loalza & Co.	1,700	
Jimenez & Escobar	1,200	
Dumarest & Co.	1,300	
Meyer Hecht	1,300	
Fidanque Bros. & Co.	1,200	
Eggers & Heinlein	1,200	
A. M. Capen Sons	1,000	
Livingstone & Co.	1,400	
E. R. Strout	1,200	
W. R. Grace & Co.	700	
Andreas & Co.	400	
Roldan & Van Sickle	300	
A. N. Rotholz	300	
For Europe	1,100	110,200
SEPT. 16.—By the <i>Cervantes</i> =Bahia:		
J. H. Rossbach & Bros.	20,000	
SEPT. 21.—By the <i>Esperanza</i> =Mexico:		
H. Marquardt & Co.	1,500	
Harburger & Slack	1,200	
Thebaud Bros.	500	
E. Steiger & Co.	200	
For Hamburg	2,500	5,900
SEPT. 22.—By the <i>Alliance</i> =Colon:		
Piza, Nephews & Co.	2,400	
Meyer Hecht	1,400	
E. B. Strout	2,000	
A. H. Racines	1,500	
L. N. Chemedin & Co.	1,300	
Lawrence Johnson & Co.	1,000	
G. Amsinck & Co.	1,100	
J. Ferro	1,000	
C. Wessels & Co.	800	12,200
AFRICANS.		
AUG. 25.—By the <i>Cevic</i> =Liverpool:		
United States Rubber Co.	55,000	
Rubber Trading Co.	11,500	67,500
AUG. 25.—By the <i>Kroonland</i> =Antwerp:		
George A. Alden & Co.	125,000	
A. T. Morse & Co.	16,000	141,000
AUG. 27.—By the <i>Tautonic</i> =Liverpool:		
George A. Alden & Co.	12,000	
Joseph Cantor	2,000	
Poel & Arnold	2,500	16,500
AUG. 28.—By the <i>Phanet</i> =Hamburg:		
Poel & Arnold	14,600	
Rubber Trading Co.	1,500	15,500
AUG. 28.—By the <i>Patria</i> =Lisbon:		
United States Rubber Co.	55,000	
AUG. 31.—By the <i>Zeeland</i> =Antwerp:		
George A. Alden & Co.	20,000	
AUG. 31.—By the <i>Arabic</i> =Liverpool:		
George A. Alden & Co.	90,000	
SEPT. 3.—By the <i>Patria</i> =Hamburg:		
Rubber Trading Co.	7,500	
A. T. Morse & Co.	3,500	11,000
SEPT. 4.—By the <i>Germanic</i> =Liverpool:		
George A. Alden & Co.	17,000	
United States Rubber Co.	11,500	
Poel & Arnold	9,000	
Henry A. Gould Co.	7,500	45,000

AFRICANS—Continued.

SEPT. 8.—By the <i>Etruria</i> =Liverpool:		
Poel & Arnold	34,000	
Robinson & Tallman	11,000	
A. T. Morse & Co.	2,000	47,000
SEPT. 8.—By the <i>Statendam</i> =Rotterdam:		
George A. Alden & Co.	62,000	
Poel & Arnold	37,000	99,000
SEPT. 8.—By the <i>Finland</i> =Antwerp:		
Poel & Arnold	73,000	
A. T. Morse & Co.	81,000	
George A. Alden & Co.	10,000	
Joseph Cantor	5,000	
William Wright & Co.	3,000	172,000
SEPT. 11.—By the <i>Peninsular</i> =Lisbon:		
Poel & Arnold	41,000	
SEPT. 9.—By the <i>Majestic</i> =Liverpool:		
United States Rubber Co.	30,000	
Poel & Arnold	3,000	33,000
SEPT. 10.—By the <i>Graf Waldersee</i> =Hamburg:		
A. T. Morse & Co.	18,000	
Poel & Arnold	3,000	21,000
SEPT. 12.—By the <i>Campania</i> =Liverpool:		
A. T. Morse & Co.	17,000	
Poel & Arnold	5,000	22,000
SEPT. 14.—By the <i>La Gascogne</i> =Havre:		
A. T. Morse & Co.	22,000	
SEPT. 14.—By the <i>Vaderland</i> =Antwerp:		
George A. Alden & Co.	238,000	
A. T. Morse & Co.	8,000	
Poel & Arnold	10,000	
For Boston	100,000	354,000
SEPT. 17.—By the <i>Oceanic</i> =Liverpool:		
George A. Alden & Co.	48,000	
United States Rubber Co.	45,000	88,000
SEPT. 19.—By the <i>Philadelphia</i> =London:		
George A. Alden & Co.	38,000	
United States Rubber Co.	25,000	
Poel & Arnold	4,500	64,500
SEPT. 21.—By the <i>Umbria</i> =Liverpool:		
Poel & Arnold	25,000	
A. T. Morse & Co.	7,000	
George A. Alden & Co.	2,000	34,000
SEPT. 22.—By the <i>Noordam</i> =Rotterdam:		
A. T. Morse & Co.	30,000	
Poel & Arnold	6,000	36,000
SEPT. 23.—By the <i>Palatia</i> =Hamburg:		
A. T. Morse & Co.	33,000	
Rubber Trading Co.	4,500	37,500
EAST INDIAN.		
AUG. 29.—By the <i>Philadelphia</i> =London:		
Poel & Arnold	5,800	
SEPT. 2.—By the <i>Tiebergheim</i> =Singapore:		
Otto Meyer	10,000	
Winter & Smilie	17,000	
Rubber Trading Co.	15,000	42,000
SEPT. 5.—By the <i>Schoenfels</i> =Calcutta:		
Poel & Arnold	11,000	
SEPT. 5.—By the <i>St. Louis</i> =London:		
Poel & Arnold	9,000	
SEPT. 19.—By the <i>Philadelphia</i> =London:		
Poel & Arnold	44,500	
SEPT. 21.—By the <i>Macduff</i> =Singapore:		
William Wright & Co.	15,000	
Otto Meyer	14,000	29,000
FONTIANAK.		
SEPT. 2.—By the <i>Tiebergheim</i> =Singapore:		
Robert Brans & Co.	160,000	
Poel & Arnold	150,000	310,000
SEPT. 21.—By the <i>Macduff</i> =Singapore:		
Poel & Arnold	250,000	
Robert Brans & Co.	135,000	
W. R. Russell & Co.	55,000	
J. H. Recknagel & Co.	50,000	490,000
GUTTA-PERCHA AND BALATA.		
SEPT. 8.—By the <i>Furnessia</i> =Glasgow:		
Kempshall Manufacturing Co.	1,500	
Karle Brothers	1,000	2,500
BALATA.		
AUG. 26.—By the <i>Maracas</i> =Trinidad:		
George A. Alden & Co.	5,200	
E. F. Dairrell & Co.	1,000	6,200

SEPT. 12—By the New York—London:		
Poel & Arnold.....	5,500	
H. A. Gould Co.....	4,500	10,000
SEPT. 21.—By the Minneapolis—London:		
H. A. Gould Co.....	3,800	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—AUGUST.

Imports:	POUNDS.	VALUE.
India-rubber.....	3,039,422	\$1,936,823
Gutta-percha.....	11,373	5,476
Gutta-jelutong (Pontianak) ..	679,182	16,282
Total.....	3,729,877	\$1,958,051

Exports:

India-rubber.....	69,011	\$46,872
Recalimed rubber.....	104,373	12,601
Rubber Scrap Imported.....	1,097,896	\$67,173

BOSTON ARRIVALS.

	POUNDS.
AUG. 1.—By the New England—Liverpool:	
George A. Alden & Co.—African....	22,460
AUG. 3.—By the Lancastrian—London:	
George A. Alden & Co.—East Indian	6,006

AUG. 3—By the New England—Liverpool:	
Poel & Arnold—Fine Para.	5,667
AUG. 11.—By the Philadelphia—London:	
Poel & Arnold—East African.....	11,008
AUG. 20.—By the Nazonia—Liverpool:	
George A. Alden & Co.—African....	1,551
Total.....	46,092
[Value, \$30,662.]	

PONTIANAK.

AUG. 28.—By the Nubia—Singapore:	
Otto Meyer.....	23,843

AUGUST EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Schrader & Co.....	9,350	6,290	34,180	—	49,820	68,170	7,480	48,040	4,331	128,021	177,841
Frank da Costa & Co.....	25,116	4,094	108,056	150	140,416	43,552	3,204	24,000	—	70,756	211,172
Adelbert H. Alden.....	47,505	14,255	37,908	—	99,668	57,610	7,900	13,860	4,016	83,386	183,054
Singlehurst, B'hurst & Co.....	—	—	—	—	—	9,532	2,182	1,984	—	13,698	13,698
Neale & Staats.....	—	—	63,200	—	63,200	31,410	4,032	—	10,570	46,018	109,218
Denis Crouan & Co.....	8,247	671	30,750	—	39,668	1,328	170	7,291	—	8,791	48,459
Pires, Teixeira & Co.....	12,413	829	4,776	—	18,018	1,954	—	1,047	—	3,001	21,019
Sundry small shippers.....	5,715	340	5,162	—	11,223	10,520	1,119	10,931	733	23,312	34,535
Direct from Iquitos.....	—	—	—	—	—	1,445	755	1,035	32,753	35,988	35,988
Direct from Manãos.....	118,071	12,454	19,465	3,798	153,788	195,678	23,259	26,927	13,029	259,793	413,581
Total for August.....	229,417	38,939	303,497	3,948	575,801	421,214	50,101	135,117	66,332	672,704	1,248,565
Total for January-July.....	4,370,521	1,082,234	2,955,118	1,066,171	9,474,044	5,079,357	634,320	463,578	2,494,580	9,671,844	19,145,893
TOTAL SINCE JANUARY 1.	4,599,938	1,121,178	3,258,615	1,070,119	10,049,850	5,500,57	684,43	1,598,695	2,560,912	10,344,608	20,394,458

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	4,380,853	246,296	4,074,557	July, 1903.....	2,081,984	3,598,000	[8716,016]
a January-June.....	31,218,867	1,505,217	29,713,650	January-June.....	29,318,128	19,415,872	9,902,256
Seven months, 1903.....	35,539,730	1,751,513	31,788,207	Seven months, 1903.....	32,300,112	23,013,872	9,186,240
Seven months, 1902.....	30,308,134	2,102,630	28,205,504	Seven months, 1902.....	29,076,096	17,790,528	11,285,568
Seven months, 1901.....	34,899,446	2,172,839	32,726,605	Seven months, 1901.....	31,518,144	18,871,552	12,646,592
a—Corrected figures.				b—Net Exports.			
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	2,806,320	525,140	2,281,180	July, 1903.....	121,880	6,380	115,500
January-June.....	18,357,240	6,686,020	11,671,220	January-June.....	899,360	94,380	804,980
Seven months, 1903.....	21,163,560	7,211,160	13,952,400	Seven months, 1903.....	1,021,240	100,760	920,480
Seven months, 1902.....	19,546,780	7,583,180	11,963,600	Seven months, 1902.....	870,760	80,960	789,800
Seven months, 1901.....	17,127,000	6,590,100	10,536,900	Seven months, 1901.....	897,820	117,040	790,780
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	1,325,280	690,140	635,140	July, 1903.....	218,900	4,400	214,500
January-June.....	8,326,560	4,609,880	3,716,680	January-June.....	1,504,580	12,320	1,492,260
Seven months, 1903.....	9,651,840	5,300,020	4,351,720	Seven months, 1903.....	1,723,480	16,720	1,706,760
Seven months, 1902.....	10,013,520	4,917,660	5,095,860	Seven months, 1902.....	1,600,280	10,780	1,589,500
Seven months, 1901.....	10,162,020	6,310,920	3,851,100	Seven months, 1901.....	1,384,020	19,580	1,364,440
BELGIUM.†				NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
July, 1903.....	284,885	435,977	[d 151,092]				
c January-June.....	3,732,883	2,643,519	1,089,364				
Seven months, 1903.....	4,017,768	3,079,496	938,272				
Seven months, 1902.....	4,198,298	3,796,705	1,401,593	* General Commerce. † Special Commerce.			
Seven months, 1901.....	4,062,625	3,345,782	717,043				

c—Corrected figures.

d—Net Exports.

